

ISSN 0132-0750



SOVIET MILITARY REVIEW

THE MOSCOW
MEETING:
A New Step to
a Nuclear-Free World

HOW YURI GAGARIN
PERISHED

WHO LET THE JINNI OUT?



★ **SOVIET**
MILITARY REVIEW

No. 8 AUGUST 1988

Founded 1965
Appears monthly in Russian,
English, Arabic, Dary, Spanish,
Portuguese and French

Editor-in-Chief
Nikolai VELIKANOV

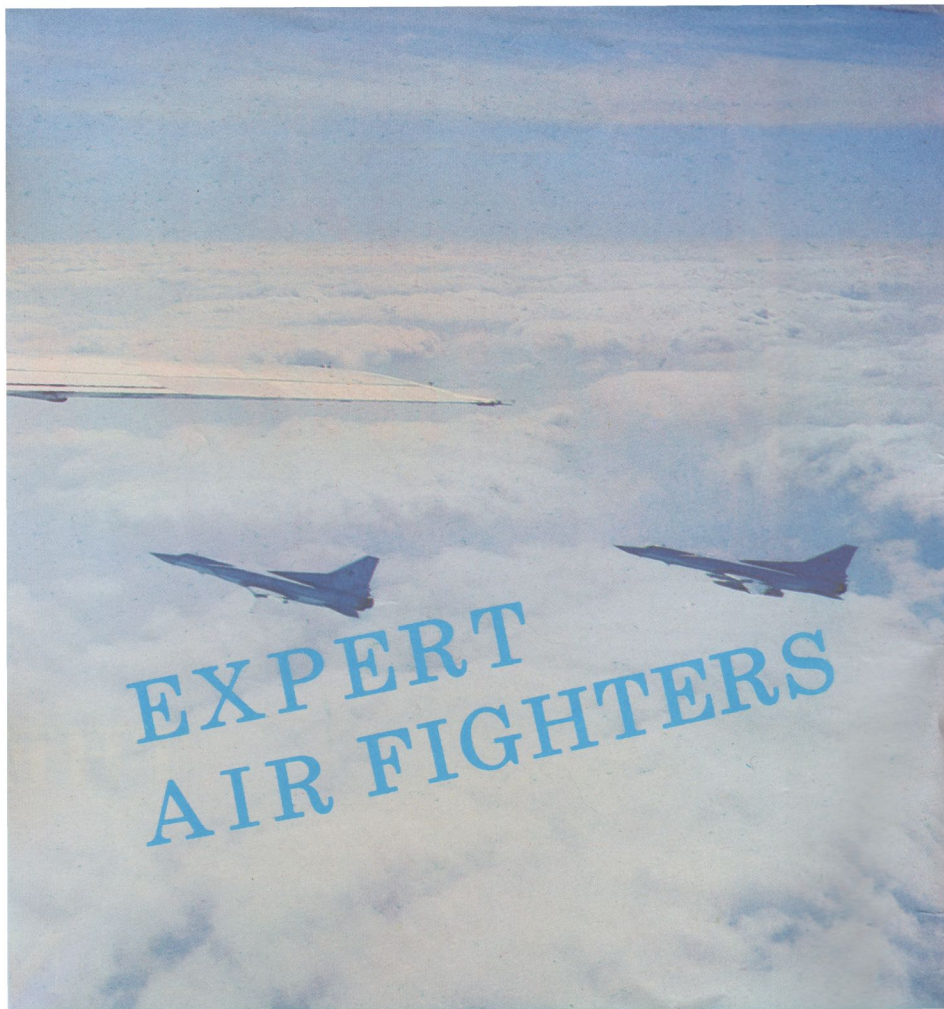
EDITORIAL BOARD

Gennady Gerasimov, Artur
Inyakov, Yuri Konorov, Vla-
dimir Kozin, Sergei Krasnov,
Nikolai Kurov, Pyotr Kuznet-
sov, Vitaly Laptev, Vitaly Lo-
sikov, Bronislav Makarevich,
Vladimir Molchanov, Ivan No-
voseletsky, Valentin Perov
(M a n a g i n g E d i t o r),
Valery Sharov, Leonid Sher-
shnyov, Lev Supran, Vladimir
Skaryukin, Boris Teltsov (A s-
s o c i a t e E d i t o r), Viktor
Vlasyuk, Nikolai Yermeyev,
Vladimir Zhukov.

Soviet Military Review
2, Marshal Biryuzov Street
Moscow, 123298, USSR
Tel. 198-55-52, 198-55-30,
198-10-39

KRASNAYA ZVEZDA
Publishing House

Art and Design:
Lyudmila Glushkova
Layout:
Tatyana Vedernikova



THERE was nothing special in the flight as observed from the command post: the planes took off, detected the target, destroyed it and safely landed. Ordinary day-to-day work.

However, huge risk-related effort underlies this seeming simplicity. It is packed with long hours of tense theoretical studies, pre-flight training air duels with a conventional enemy, and flights in any weather and visibility. It takes many years to make a novice into a real pilot and expert air fighter, capable of taking the correct decision in split seconds whatever the situation.

Major Anatoly Obyedkov (left) and Senior Lieutenant Yevgeny Derkulsy have hundreds of flying hours to their credit. Although both of them are experienced flyers and hold orders, they analyse their actions before and after each flight in order to find the best decision. This helps them faultlessly carry out the missions assigned.

Photos:

High above the clouds

Exchange of experience benefits everyone

Photos by Nikolai ARYAYEV

FRONT COVER: Before flights

Photo by Anatoly RYABKO

PERESTROIKA IS IRREVERSIBLE

The 19th All-Union Party Conference was a major development. A significant step towards further democratisation in the CPSU and higher activity of the Communists.

Subject matter: progress on the 27th Party Congress decisions, summing up the first half of the 12th Five-Year-Plan period and Party organisations' targets for furthering the perestroika drive. Measures were approved for democratisation within the Party and society.

The Party members' forum assessed the political outcome of the Party's multi-facet activities after the 27th Congress, evaluated the Soviet Union's advance along the main lines of the economic and social development. Analysis was also made of the way a radical reform of economic management is being conducted and the Party, state and economic bodies' contribution to perestroika.

The word "perestroika" can now be heard all over. Interest is mounting in the revolutionary renovation of life in the USSR. The nation's high morale is accompanying the translation into actions of the perestroika plans.

The national economy has seen some positive changes. Labour productivity has risen. Industrial output costs are lower, for the first time in years. Agriculture is developing steadily. The Party is consistently tackling the goals of acceleration of social development.

The restructuring process is all-embracing. Along with the nation, the Soviet Army and Navy have embarked on it.

Mikhail Gorbachev's report at the 19th All-Union Party Conference stressed that the effectiveness of our defence effort must be embodied chiefly in qualitative parameters, both as regards technology and military science, and the composition of the Armed Forces.

Perestroika makes claims on all commanders, political workers and personnel. The requirements are hardened because of the complex international situation and the aggressive policy of the NATO reactionary circles. The war peril is still lingering, despite the fact that the USSR's consistent peaceable policies have led notable positive tendencies for relaxation of international tension.

Carrying through the Party decisions on dramatic renovation in the army and navy, the Communists are constantly improving on the forms and methods of servicemen training and education, enhancing the troops' combat readiness and bettering discipline and order. In the lead are command and political officer staff. An atmosphere of mutual exactingness, independence and personal responsibility of everyone is being introduced in the units and on ships. The customary stereotype thinking has been dumped, and man with his needs and cares is in the focus of political and educational activities.

At the same time, the process has far not everywhere got into full swing. In some spheres connected with the armed forces, there are still elements of placidity and complacency. The "survivability" of these abnormalities can be accounted for by inert thinking of individual military personnel representatives, their habitual scribbling, show-off tendencies, a parasitic attitude and sit-and-wait policy. However, in the bulk of military collectives, the healthy forces are getting the upper hand and working in earnest for perestroika.

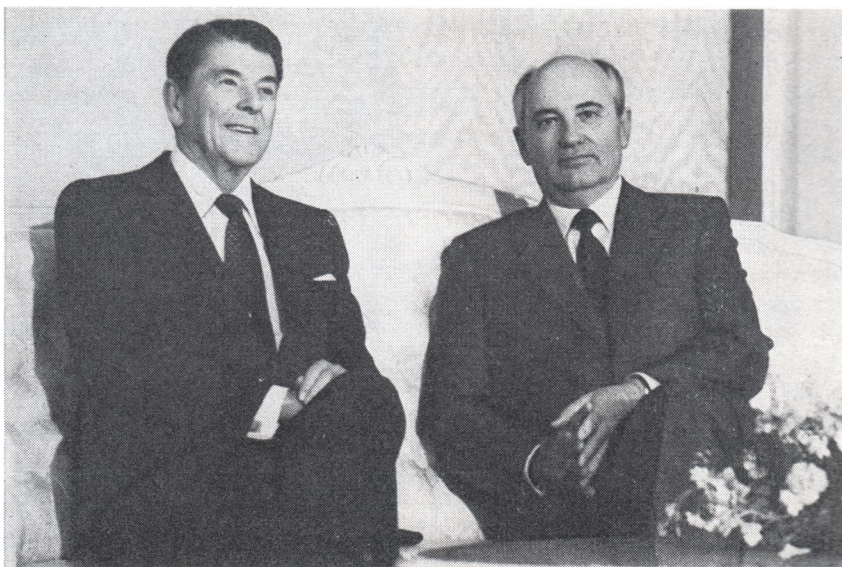
FROM THE EDITOR

A NEW STAGE FOR

ON THE eve of the US President Ronald Reagan's visit to the USSR there was plenty of forecasts. The opponents of disarmament wanted the Moscow meeting to put an end to the process of arms limitation and disarmament. The US "right wing" did all they could to drag out the ratification of the INF Treaty. Right up to the very moment Mr Reagan came to Moscow, they were putting the brakes on the elaboration of a US-Soviet treaty on a 50-percent reduction in strategic offensive arms. The obvious aim was to gain time and wait for the situation to change: a new master is due soon at the White House and he will not necessarily follow in his predecessor's footsteps.

Alas, the whole programme of the Moscow dialogue was not fulfilled. No treaty on a 50-percent strategic offensive arms reduction was signed. Why then? Mikhail Gorbachev said it was possibly the most complex task the world had ever faced in post-war politics. Not due to the difficulties of a technical character, which there were. It turned out much more difficult to negotiate the obstacles of psychological and political nature. Here we come to the conclusion that the US was not prepared.

Having exchanged the instruments of ratification, the heads of the delegations reached the climax of a dramatic process, which materialised in the elaboration of a Treaty on the Elimination of Intermediate- and Shorter-Range Missiles. But then it was not the end of the process, a hope for



disarmament opponents. The dialogue continued. Mikhail Gorbachev and Ronald Reagan stated that the INF Treaty gave a start for the age of nuclear disarmament to come; the USA and the USSR would accelerate the elaboration of a strategic nuclear arms reduction treaty.

The Moscow summit, in the overwhelming opinion of the world press, was characterised by constructiveness, realism and hope for the future. The principal thing, said both the Soviet and the US leaders, was that the dialogue between the two countries had been continued, now encompassing all vital issues of international politics and bilateral relations.

What specifically has been achieved in Moscow? You can find the answer in the Joint Statement between the USSR and the USA:

— A Joint Draft Text of a Treaty on Limitation and Reduction of Strategic Offensive Arms was elaborated, the sides started ex-

changing data on their strategic forces.

— The sides continued negotiations to achieve a separate agreement concerning the ABM Treaty building on the language of the Washington Summit Joint Statement of December 10, 1987.

— Substantial additional common ground was broken on air-launched cruise missiles and on verification of mobile intercontinental ballistic missiles.

— The agreement between the USA and the USSR on notification of launches of intercontinental ballistic missiles and submarine-launched ballistic missiles was signed, reflecting the desire of the sides to reduce the risk of a nuclear war outbreak. The sides agreed to conduct a joint verification experiment relating to nuclear testing at each other's test sites.

— The issues of conventional arms reduction and chemical weapons ban were discussed.

— A wide range of re-

THE WORLD POLITICS

gional conflicts was on the agenda.

— A new programme for 1989-1991 was signed under the General Exchanges Ag-

"I'll permit myself to use the following solemn phrasing: the completion of the procedures for putting into effect the INF Treaty has made the Moscow meeting a landmark in Soviet-American dialogue, and in world politics as well."

Mikhail GORBACHEV

reement. Agreements on cooperation in transportation science and technology and mutual fisheries relations, and others were concluded.

— Human rights and humanitarian concerns and a number of other issues were discussed.

The USSR had not seen a US President for 14 years. Now he came, a man known for his firm anti-communist stance. But Mr Reagan publicly renounced his definition as an "evil empire" of the Soviet Union. The world press wrote that this was the beginning of the end for the cold war. We wish it were.

But if we want to remain in a world of realities, and it is there that the US-Soviet dialogue takes place, we should see not only the things that unite us. We should take a look at the issues that still divide us, and the fourth summit was a clear reflection in this respect.

The US delegation refused the Joint Statement

to include the idea of a US-Soviet adherence to the solution of problems purely by political means, on the basis of a balance of interests, on a basis of respect for the social choice of peoples. Why? Armed forces and arms will not just vanish at a word. This is merely a political reference point.

But the refusal mirrored a contradictory stance of the US Administration. On the one hand, they speak about their adherence to peace. On the other hand, we hear about relying on force and military might. Force was proclaimed a principle vis-a-vis the Soviet Union during the June capitalist economic summit in Toronto. The West negotiates the issue of arms reduction and simultaneously seeks ways to compensate for "losses". The US-Soviet negotiations on a 50-percent strategic offensive arms reduction is vivid testimony to this.

Viktor Karpov, a high-ranking USSR Foreign Ministry expert on arms limitation and disarmament, said that two major factors hampered a treaty: one, failure to live by the 1972 ABM Treaty obligations and two, air- and sea-launched cruise missiles. The first factor supplements stubborn US adherence to the Star Wars project. As far as cruise missiles are concerned, the US party agreed to their limitation. But only in principle.

Sea-launched cruise missiles were a stumbling block at the Moscow meeting. US Defence Secretary Frank Carlucci maintained that since SLCMs could not be verified, it was not possible

to dwell on a certain limit. But it was, in effect, just an excuse. According to Marshal of the Soviet Union Sergei Akhromeyev, Chief of

"If these talks continue, I will do all I can to persuade my successor to carry them on. I'll probably tell him that he will see for himself the exceptional cordiality and hospitality of the Russian people."

Ronald REAGAN

the USSR Armed Forces General Staff, one can reach an accord which takes into account the submarines and surface vessels that should be open for SLCMs. American stubbornness can be explained by the fact that in the mid-1990s the US Navy will have deployed 3,994 cruise missiles, including 758 with nuclear warheads.

The US party did not accept a Soviet compromise proposal of reducing arms and armed forces in Europe in three stages, beginning with exchanging initial data and ending up with an immense armed forces reduction down to a level excluding an ability of launching offensive operations.

In a nutshell, there still remain a number of unsolved problems. The two sides have made it a point to continue with negotiations and contacts at the highest level. New agreements require new meetings.

HOMECOMING

Two opposite streams are constantly flowing along Afghan roads. Columns of combat vehicles are moving northward, towards the USSR state frontier. The Soviet servicemen have honestly discharged their internationalist duty, and are leaving the territory of the friendly country.

Afghan fugitives are returning home. This has become possible owing to the Geneva accords and the policy of national reconciliation pursued by the Afghan government.

BREAKING STEREOTYPES

I remember a press conference in Kabul on the eve of the entry into force of the Geneva agreements on Afghanistan. Hero of the Soviet Union Lieutenant-General Boris Gromov, commander of the Limited Contingent of Soviet Forces, granted an interview to Soviet and foreign journalists. A group of pressmen was to fly to Jalalabad.

A foreign correspondent said: "Thank you for the opportunity to visit Jalalabad. We know, however, that there are no more helicopter gunships there. So how are you going to assure safety for the flight from Kabul to Jalalabad?"

"We'll do our best," replied the commander.

He gave a faint sad smile, but instantly his face became serious again. What was the general pondering? Perhaps it was the paradoxicality of the situation that struck him? Some Western governments had been quite lavish in providing the "faith fighters" with *Stingers*, *Blowpipes* and other combat equipment. The results of this short-sighted policy were not long in coming. In Mazar-i-Sharif, Khost and Kandahar the terrorists brought down several civilian aircraft, killing innocent women, old people and children. Did representatives of the "free" press know about it? Certainly. But they were not in a hurry to denounce the acts of barbarism. They were preoccupied with an ostensibly inborn aggressiveness of the Russians; the USSR's expansionist designs and the "valour" of Afghanistan's "freedom fighters". And now they tied in their own security with the Soviet helicopter pilots.

Very likely, many Western colleagues made this adjustment when the Tu-154 carrying the journalists to Kabul began a steep descent

from an altitude of 10,000 metres. Simultaneously, several pairs of Mi-24 helicopters took off to perform a circling flight in the vicinity of the aerodrome. They were assigned the mission of watching the ground situation and stopping the crews of AD missile systems installed on *Toyota* cars, trucks and behind wattle and daub fences from firing. They would have to deal with *Stingers* and *Blowpipes* if they were fired at our aircraft.

It is a pity some journalists were not able to meet the heroic helicopter pilots. Otherwise, they would see how young and lively were Captains Andrei Podluzhny and Yuri Lomovtsev, Senior Lieutenants Aleksei Ivanov and Aleksandr Darvin and their comrades. Nevertheless, they had to risk their lives to ward off danger from other people.

Each sortie from Kabul airfield is a combat mission. In May, for instance, the terrorists fired rockets at Kabul on several occasions, killing many civilians. Few people know that the Soviet pilots averted a still greater danger. While in flight one day, they spotted missile launchers targeted at the Afghan capital. The launchers were destroyed.

Captain Aleksei Aksyonov's machine was shot down in the Kabul sky. The commander did not live to see his six-year-old son Roman again. Senior Lieutenant Ivan Kravtsov, operator pilot from Aksyonov's crew, saw his daughter only once, when she was two months old. The airmen protected civilian aircraft and the city from modern missiles, but died themselves.

Lieutenant-General Gromov was as good as his word. The plane flew safely to Jalalabad and back. Some journalists had a chance to make the 150-km trip to Kabul on the armour together with Soviet soldiers. I saw a Swedish newspaper woman with a soldier's hat given to her by a Soviet serviceman. Free and easy talk, a sip of water with a flavour of chlorine and metal from a soldier's flask and the scent of danger made people friendly. I believe many Western correspondents drew the conclusion that these good-natured and smiling boys could not possibly be cruel invaders, as they were depicted by the Western media.

I remember a Western journalist ask Yefrei-
tor Andrei Kirzhatsky:

"Are you leaving Afghanistan victor or vanquished?"

The soldier answered in a calm voice:
"We did not come here to conquer, but provide assistance and defend the country against interference from without. Now there are ample guarantees for non-interference in Afghan affairs. This is the victory of the Republic and the Afghan people."

One day the journalists visited a military unit. As usual, a relevant schedule was drawn: visiting the barracks, the canteen and the soldier's club. But the plan was unexpectedly broken by a song performed by an amateur group. The boys sang about their service, severe hardships and fallen friends. In a few minutes the club was packed to capacity. When the last sounds of the song had died down, the audience burst into applause. Soloists Vitaly Luzin, Aleksei Strakhov, Sergei Fedortsev and Vladimir Pyzh answered some questions. Then they were asked to sing the song again.

"Good boys, thank you," said a white-haired elderly man with cameras hanging around his neck, shaking hands warmly with the Soviet soldiers. He spoke Russian with a pronounced accent.

A Bulgarian journalist said proudly:

"They are our friends!"

"Combat friends," added his Afghan colleague.

A HARD ROAD TO PEACE

In an abandoned village in the Logar Province the scouts discovered an ammunition cache. Rocket projectiles, mines, hand grenades, machine guns and explosives bore the trade-marks of many countries. The reconnaissance company deputy commander for political affairs Yuri Batyuk thought, looking at the weapons: "It would be a good idea not to explode them here, but leave a sample of each as a souvenir, to remember where such presents come from. So that in exchanging diplomatic smiles you would never forget the real attitude to us of the manufacturers and suppliers of these weapons." The scouts destroyed the cache.

How do the so-called fighters for the freedom of the Afghan people dispose of the armaments lavishly supplied to them? The record shows that more often than not ordinary Afghans fall victims to the terrorism. As the scouts were returning from a mission, a 14-year-old boy was blown up by an Italian mine planted near a village. The company medical instructor Senior Sergeant Konstantin Linkov was the first to rush to his aid. He stopped the bleeding, applied a tourniquet to the boy's leg and administered an anaesthetic. The boy's life was saved. His

father came to the company's premises for a long time after that, bearing fruit and vegetables. In their turn, the servicemen supplied him with food and medicines.

This is just one example. On the whole, our medical personnel treated more than 400,000 people in remote and barely accessible areas.

The total assistance to the Afghan people is quite appreciable. The Soviet troops alone built and repaired 158 schools and pre-school facilities; 44 hospitals, 35 mosques and 352 residential buildings. They drilled 70 water wells, dug 156 km of irrigation channels and built over 900 km of roads. Leaving Afghanistan, the Soviet servicemen hand over to the Afghan people 170 military cantonments, buildings and equipment to the tune of 600 million roubles. Ordinary Afghans know these and other facts of Soviet assistance. They hail the policy of national reconciliation and the Geneva agreements on Afghanistan.

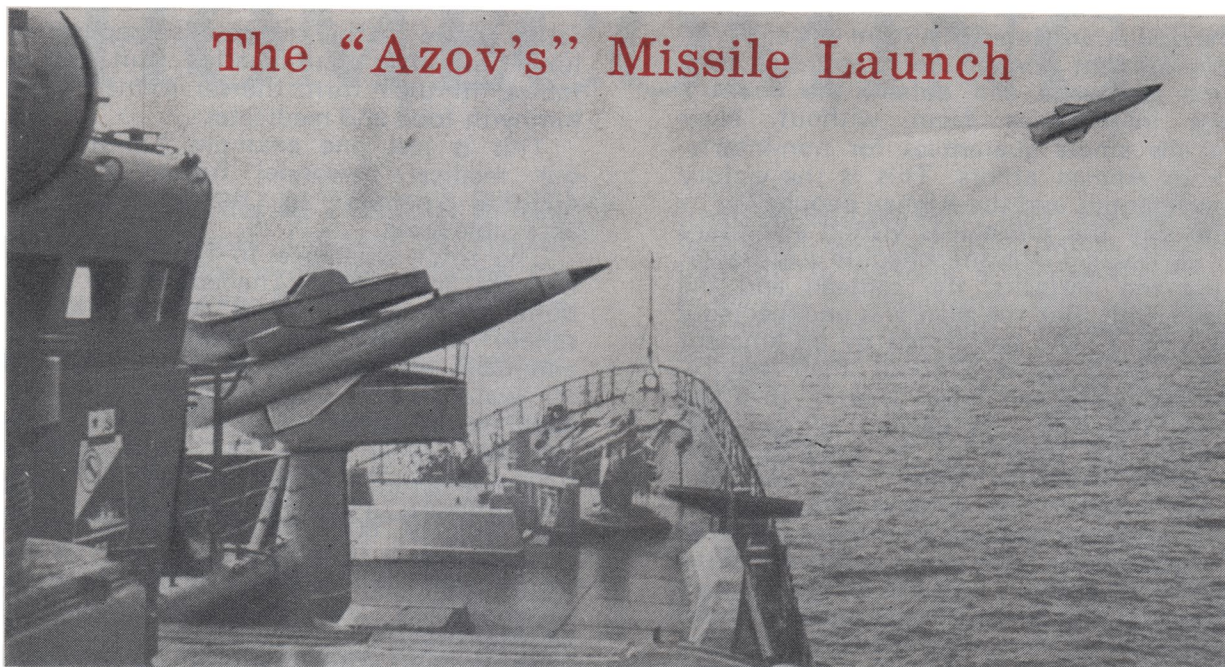
In a field outside Kabul, we talked with a group of peasants. A turbaned white-bearded man with a wrinkled face stopped work to examine the newcomers. When asked how he assessed the withdrawal of the Soviet forces, he replied:

"The people are tired of the war. The Afghan government and the Soviets realise common people's aspirations. It would be a good thing if the 'irreconcilables' realised this too," he said motioning towards the Pakistan border.

His apprehension was confirmed later on, when we met with Pushtuns on the outskirts of Kabul and with repatriates in a refugee centre. In violation of the Geneva accords, numerous attempts were made to attack the Soviet columns on the march and outposts on the approaches to the roads. These attempts were frustrated. Soviet newspapers carried a statement by the USSR Ministry of Foreign Affairs which emphasised that outside interference in the Afghan affairs had not stopped and had even intensified. Article 2 of the Afghan-Pakistani agreement on the principles of mutual relations, specifically on non-interference and renunciation of intervention, has been grossly violated.

The Soviet Union has honestly abided by the Geneva accords since their entry into force. The troops are being withdrawn in strict accordance with the schedule. We expect the same from the other parties to the Geneva talks. The Afghan people have opted for a free, independent and non-aligned Afghanistan.

Lieutenant-Colonel Bronislav MAKAREVICH



The "Azov's" Missile Launch

The alarm sounds. The seamen's sleep is interrupted by the discordant fire gongs and the radio communication loudspeakers. Dressing in a few seconds, dozens of men dash along the corridors and into compartments in a hurry to take their action stations.

Time is now more precious than ever. The big ASW ship "Azov" has been ploughing the seas for several days and nights in search of a conventional enemy submarine. And at long last: "Target spotted!" But the sonarmen may have contacted the sub merely for a short time. And those below the surface are not new to the job and are exerting themselves to get away from the chasers. Suddenly,

a new report came in: "An air target head-on. Now it's the main danger."

Time is being compressed, defying all laws of physics. The apparatus are quickly attuned and requisite data fed into the automatic equipment. Mitchman Vladimir Smirnov, team starshina of a fore control group, and his subordinates, seamen Ivan Kulesh and Aleksandr Yarunin — all are closely watching the apparatus, their hands habitually outputting the parameters. The faces are tense and the hearts are beating quicker as the ship's success largely depends on their nimble and faultless actions.

"Missile department ready for combat," comes the report. "Launch!"



For the Sake of People

What are the physician's thoughts about? Is he going through the next operation in his mind's eye? Making up an outline of a lecture for his students? Thinking about the problems facing the institute which he has headed more than 15 years? Or could it be that the autumn of 1941 has come back to the old soldier? At 19 he was then a doctor's assistant, fighting in the Baltic.

He has witnessed so much happiness and woe, pain and joy in his 47 years as a military medic... There have been complicated operations and triumphs over grave ailments. But there have also

been moments of fury at inability to rescue a patient... A long life has gone by, that of work for the sake of people. A thorny path from an ordinary assistant to a famous urologist, Candidate of Medical Sciences, assistant professor holding the title of People's Physician of the USSR.

Yuri Glukhov, Major-General of the Medical Service, is still in the thick of life, concerned about so many things and engaged in creative endeavour. Just as ever, all his inspirations centre round his favourite occupation and the dearest thing is man's health.

People's Theatre

Servicemen have some leisure hours, though not many. Those are generally taken up by hobbies like hunting or fishing. Boris Voloshin, Irina Kashevarova and Vladimir Malishevsky from Grodno hurry in their free time to the garrison Officers' House. They are members of the amateur drama theatre directed by Ivan Sidnev. Initially, the repertoire was meagre and the acting left much to be desired. But in time



Photo: A scene from a play by the people's theatre

the enthusiasts got more experience and came into their own, so to speak. By and by they enjoyed popularity and became a people's theatre.

The subject matter of the plays is mostly military-patriotic. The theme of war and the need to defend world peace evokes a warm response from the spectators.

Rally of Soldiers' Mothers



Women of different nationalities, ages and specialities — they are all mothers. All through the long months of the sons' service the mothers worry: about the food, clothes, friends and commanders. Every letter brings joy as the son's problems are the mother's. To be the soldier's mother is both hard and honourable.

They have assembled here to listen to those to whom they entrusted their sons' lives, to exchange opinions and discuss problems of children education. The atmosphere is solemn, and the mothers are deeply moved. They keep glancing at the back rows where their sons are sitting. The best soldiers have been invited to the meeting with mothers. In the speeches they heard the women found answers to their inmost questions. When a particular soldier was highly praised, the mother's face would flush and the sons would suddenly think how young their mothers were. . .

Five Thousand Jumps

That was the achievement of Colonel Gennady Sukhanov. Even professional parachutists do not have that many to their credit. After he touched the ground, his friends ran up to the hero of the day and warmly congratulated him.



LAWS OF WAR

PEOPLE are powerless to establish, alter or abolish the laws of war but can use them to practical ends. It is true, though, that the laws of war, like all laws of social development, and unlike the laws of nature, can manifest themselves in no other way than through the activity of people possessing conscience and will-power. This circumstance, however, in no way contradicts their objective character.

Marxist-Leninist theory provides a consistent scientific explanation of the laws of war.

The ideologists of imperialism regard war as a plurality of fortuities not subject to any laws, or as a phenomenon subject to biological, psychological or other laws. This is attested by numerous anti-scientific assertions by bourgeois sociologists, military historians and theoreticians to the effect that the Second World War has nothing to do with imperialism, its economy, policy and ideology, and that the Soviet Union's victory in the Great Patriotic War was an accident.

The Marxist-Leninist theory proceeds from the assumption that, however multifarious wars may be and however complicated and contradictory their character, their progress and outcome conform to certain laws.

Besides being objective, these laws are dialectical. This means that they are constantly developing and are related to each other and to other laws of reality. The laws of war are of a historic nature, which shows up in their mutability, origin and disappearance; these laws are also systematic. On the other hand, the dialectical aspect implies interdependence of the laws, which unites them into a single whole.

The dependence of war on its political goals is the most general law. Being a social phenomenon, the policy of classes and states determines its essence and social character and, hence, its part in the life of society. Politics prescribes the purpose and nature (just or unjust, progressive or reactionary) and also the type and kind of war.

The dependence of the course and outcome of war on the correlation of the economic potentials of the warring states (coalitions) is another important law. Formulated by Friedrich Engels, it reads: "...the entire organisation of armies and the method of fighting a battle and the resultant victory or defeat prove dependent on material, i.e. economic conditions..."

Lenin developed this law, showing that in the new historical epoch, with its wider scope of military operations and more sophisticated weapons and combat equipment, the role of economic factors steadily grows.

The experience of wars to defend the Socialist Homeland, and particularly the Great Patriotic

War, attests to the immeasurable advantages of the socialist method of production over the capitalist economic system as regards support of military operations by the requisite means of warfare.

The progress and outcome of war waged with unlimited use of all means of armed struggle largely depends on the correlation of the belligerents' military forces at the beginning of hostilities.

This correlation is characterised by quantitative and qualitative indices alike, primarily by the capability to fulfil missions to defeat the enemy. If there are serious shortcomings in combat training, it is impossible to make up for them by merely increasing the number of personnel. Conversely, victory may attend a side with inferior numerical strength which is capable to use its troops more advantageously.

The quality of the armed forces as a whole is determined by their class composition, morale, personnel proficiency, effectiveness of armament, and commander's personal combat qualities. Combat readiness is a major feature characterising preparation of armed forces for modern war.

In past wars there were quite a few cases when a belligerent suffered defeat despite a favourable correlation of forces. For instance, Britain, France and Poland outnumbered Nazi Germany before it attacked Poland by 50 percent in divisions, by nearly 100 percent in aircraft and by more than 400 percent in major warships. But this obvious advantage did not help those countries avoid heavy losses at the outset of the Second World War because of considerable miscalculations by the British, French and Polish armies' supreme command.

The course and outcome of war depend on the correlation of the warring sides' military potentials.

The goals of war can not always be attained by pre-prepared armed forces. The hostilities may drag out, thus requiring utmost and prolonged effort on the part of the army and civil population. In this case, the progress and final result of the war will depend on the correlation of war potentials, a significant role being played by changes in the correlation of forces and potentials in the course of war.

The course and outcome of war is determined by the correlation of moral, political and psychological potentialities of the belligerents' armies and peoples. The socialist social system is a source of high morale for the armies of socialist states. The morale implies manifestation of social consciousness characterising the spiritual need of the broad

Almost incessant war over millennia testifies to the existence of objective laws of warfare

Major-General Artur INYAKOV

popular masses and the Armed Forces' personnel to tackle important social, political and military missions, staunchly overcoming any hardships of war and retaining a will to win to the very end.

Psychological training means developing in the personnel the qualities which help them successfully carry out the assigned missions in tense and dangerous situations of modern war, and withstand heavy nervous and psychological loads at critical moments, never losing self-possession, courage and valour and being constantly capable of using to advantage the weapons and combat equipment.

The laws described above are common to all wars. Along with them, there are laws which manifest themselves in the course of hostilities proper (either of strategic or only operational and tactical scale). These are laws of armed struggle, which concretise the general laws of war and determine the dependence of the latter on the material basis of a battle or operation, and on the warring sides' combat power.

The material basis of a battle or operation includes materiel and personnel, i. e. armament, combat equipment and men using this armament and equipment. However sophisticated this armament may be, it is of little use in the hands of inert people who are not imbued with lofty ideals, and lack any urge to make the utmost use of the equipment. On the contrary, even less sophisticated weapons may prove more effective if handled by men inspired by a desire to discharge their duty to their country in the best way possible.

History is replete with examples of equivalent equipment producing different effects. Defending the gains of the proletarian revolution in the Civil War, the Red Army used the old equipment left over from the tsarist army. Despite an acute shortage of weapons, it routed foreign interventionist forces largely superior to it in armament and combat equipment. This was possible due to advanced methods of warfare used by the Red Army, specifically, manoeuvrability, resolution, daring offensive operations and wide use of strike forces.

The general superiority in the forces makes it possible to score victory, and an edge in the forces' combat power provides a basis for converting possibility into reality.

The armed forces' combat might depends on many factors, such as the quantity and quality of ammunition and means of its delivery; technical status, especially the degree of mechanisation and motorisation and, ultimately, the troops' mobility, numerical strength and provision with personnel and combat equipment; men's and officers' psychological training standard, proficiency and teamwork; the state

of military art and correspondence of its principles to the nature of war, the command personnel's training standard, control system, the theatre of military operations etc.

Consequently, the combat might is a unity of material means and the troops' spiritual forces and of their quantitative and qualitative aspects.

Military policy takes account of the general laws of war; these laws are also reflected in the military doctrine of the state. I would like to emphasise that the military doctrines of socialist countries are of a strictly defensive nature.

The document on the military doctrine of the Warsaw Treaty member states describes in clear-cut terms how to provide security in the nuclear missile era and avert the danger of humankind's complete annihilation. The only way to do this is to remove force and the threat of using it from the sphere of interstate relations and to resolve all controversial issues by political means.

The armed forces generally use the laws of warfare in tackling strategic, operational and tactical missions.

When considering the laws of war, special attention should be given to the principles of military structuring and military art, as, representing the fundamental ideas, norms and rules for the troops' combat activity, the principles of military art, for instance, allow the contents of the laws of war and armed struggle to be translated into the language of military practice. Thus the law according to which he who concentrates superior forces at the decisive moment and at the right place gains victory is evinced in the principle of massing forces and equipment on the main sector.

Being the basis of rational practical activity for popular masses, state control bodies and the armed forces' personnel, knowledge of the laws of war is of primordial importance in present-day conditions. The Soviet Union and the working people in fraternal socialist countries face the historic mission of averting nuclear war, the threat of which remains quite real. Compliance with the laws of war, the forms in which they manifest themselves and the ensuring principles of military structuring and military art are major prerequisites for enhancing the socialist countries' defence capability and their Armed Forces' vigilance and combat readiness.

Major-General Artur Inyakov was born in 1936. Has served in the Soviet Army since 1955. Graduate of the Voroshilov General Staff Military Academy of the USSR Armed Forces.





The policy of perestroika in the atmosphere of openness and democratisation adds to the strengthening of socialism in the USSR. The Soviet Union will never swerve from the Leninist course and surrender the gains of socialism.

"All other state bodies are under the control of, and accountable to, the Soviets of People's Deputies."

The socialist state of the whole people is the main form of people's government, expressing the interests of the whole people. It is through representation bodies of state authority that the working class, collective farm peasantry and people's intelligentsia realise their vital interests in all spheres of social life and take part in the management of state and public affairs.

At the contemporary stage, the strategic line for the development of the USSR's political system implies maximum popular socialist self-government with a view to reviving and

CPSU Central Committee to the 27th CPSU Congress emphasised that in a socialist society, particularly today, state management must not be a privilege for a limited number of professionals. All levels of the political system are working throughout the country in conditions of expanding democracy. The CPSU is guiding and coordinating their work, seeing to it that each of them discharges its functions in full measure. The Party does not command them, claim a "monopoly" in the upbuilding of the new society, or bar mass organisations from active work. This policy has ultimately brought about more openness, more democracy and, consequently, more socialism.

The Political System

VANGUARD OF THE PEOPLE

The political system is the totality of state, political and social organisations, through which popular government in the Soviet Union is exercised. It includes

the socialist state of the whole people, the Communist Party, public organisations and work collectives. The essence of Soviet society's political system is government by the working people, the leading role being played by the working class headed by the CPSU. The Constitution of the USSR reads:

"All power in the USSR belongs to the people.

"The people exercise state power through Soviets of People's Deputies, which constitute the political foundation of the USSR.

consolidating the working people's sense of responsibility for the country's destiny and personal involvement and interest in public affairs. The Communist Party, the nucleus of Soviet society's political system, is the initiator of the restructuring process in all spheres of societal life.

Exercising political leadership of the renovation process, it began with its own ranks.

OUR REFERENCE

There are nearly 100 national, over 200 republican and close on 300 local voluntary societies and organisations functioning in the USSR today. They include trade-unions, the Komsomol, various cooperatives and the like. New organisations and societies are being brought into being by the call of the times. These include nation-wide organisations of Soviet women, war and labour veterans' societies etc.

The Political Report of the

The issue of a radical reform of the political system was discussed at the 19th All-Union Party Conference. Its decisions are aimed at ensuring the full authority of the Soviets of People's Deputies, establishing a socialist state committed to the rule of law and abandoning command-style methods of work in all spheres of social life. Further improvement of the political system will help attain a qualitatively new condition for Soviet society and make perestroika irreversible.

THE MAIN ELEMENT

The main element in people's socialist self-government are Soviets of People's Deputies, which constitute the basis of the political system in the USSR. From the

very outset, they have been intended for drawing nearer popular masses and the administrative

apparatus. Over 35 million citizens have been elected to the Soviets during the postwar years.

A Soviet is an assembly of people's deputies whose duty it is to take a direct part in state management. With the emergence of the administrative-command style of management, however, the Soviets' role diminished, and many tasks were tackled without their participation. This, naturally, affected the Soviets' prestige. The principle of the socialist revolution — authority of the people and through the people, was largely discredited. At the present time, much is being done to enhance the Soviets' responsibility and prestige, develop new forms and methods of

(35.2%), 242 collective farmers (16.1%), 492 women (32.8%), 225 Komsomol members (15%) and 55 servicemen. Among the deputies are representatives of nearly all Soviet nations and ethnic groups and all age groups.

The results of the elections to and the social composition of the highest body of state authority in the USSR disproves all bourgeois ideologists' slanderous lies about the Soviet political system. Bourgeois society with its notorious freedoms can only dream of this. In the US Congress, for instance, 57 out of 100 Senators are owners of big law firms, 23 are businessmen and bankers, five are owners of large farms etc. There have never been any workers among them.

deputies and public figures, and not after a ready-made scenario drafted by officials on executive committees. Work collectives are tackling a wider range of problems, which previously were the authorities' prerogative. Managerial staff are more accountable at enterprises to their work collectives.

The principle of electivity (from several candidates) for managerial personnel is further developing. Democratisation, openness and a stronger influence on public life are the main trends in the improvement of work by public organisations. The rights recently given to the trade-unions to suspend all decisions on pay, and working and labour conditions, taken without their consent, have found popular support.

of Soviet Society

self-government and improve the electoral system as a whole. In 1987, for instance, contested elections to local bodies of state power in a number of regions were carried out in many constituencies, the number of candidates exceeding the number of seats in the constituency. The constituents were given the right to define the number of nominees and decide who would be put on the ballot.

These are just the first steps to restore the revolutionary and democratic essence of the Soviets. Additional measures will help the Soviets become true organs of people's power.

OUR REFERENCE

The composition of the newly-elected deputies to the 11th Supreme Soviet of the USSR is a manifestation of genuine government by the people. The deputies include 527 workers

THE MOTIVE FORCE

The expanding participation of working people in governing the affairs of the state and society is the chief content and criterion for maturity of socialist democracy.

Hence, popular self-government is not an individual form of socialist democracy but its motive force and principal goal.

Consistent implementation of the principles and norms of the Soviet Constitution, and improvement, on that basis, of the style and methods of work in state and public organisations, are the main reserves for the development of Soviet society's political system and socialist self-management. The practice of preparation and holding of sessions has been changed: the sessions are now held with active and interested participation of the

The Komsomol committees have been given wider rights. When the performance of high-ranking state officials is reviewed the public organisation maintaining close contacts with the relevant sectors of the state machine must be consulted. Timely, complete and genuine information at all levels is a major impetus for working people's activity and a proof of trust in people, their reason and experience.

Further development of the political system, enhanced involvement by the working people in social and political affairs and fuller realisation of socialism's advantages are the strategic course for which Soviet society under perestroika is bound.

Lieutenant-Colonel
Nikolai RYAZANOV,
Cand. Sc. (History)

GAS SCOUT PRACTICE

In organising troop protection against mass destruction weapons, commanders must be able to assess the radiation and chemical situation, draw correct conclusions and take decisions on the optimal actions for subunits. They receive the necessary information from special reconnaissance subunits. Tactical exercises are a major component of their combat training. Lieutenant-Colonel Sergei UGOLKOV tells about a lesson in the platoon commanded by Senior Lieutenant Ivan Artyomov.

ON THE eve of the exercise on the theme "Radiation and chemical reconnaissance on the offensive", Artyomov reconnoitred the area he had chosen for the lesson, mapping out the starting point, training stations and sequence, and methods to simulate contamination. To prolong the equipment's service life, he decided on a closed route with natural covers for the personnel and open stretches of the road, which permitted simultaneous

actions for several chemical reconnaissance parties.

Drill grounds in many units have special courses and routes for gas scouts, which allow diverse situations to be reproduced. But all of them have a shortcoming: the men memorise the route. As a result, they lack map orientation skills. So Artyomov changes the ground each time.

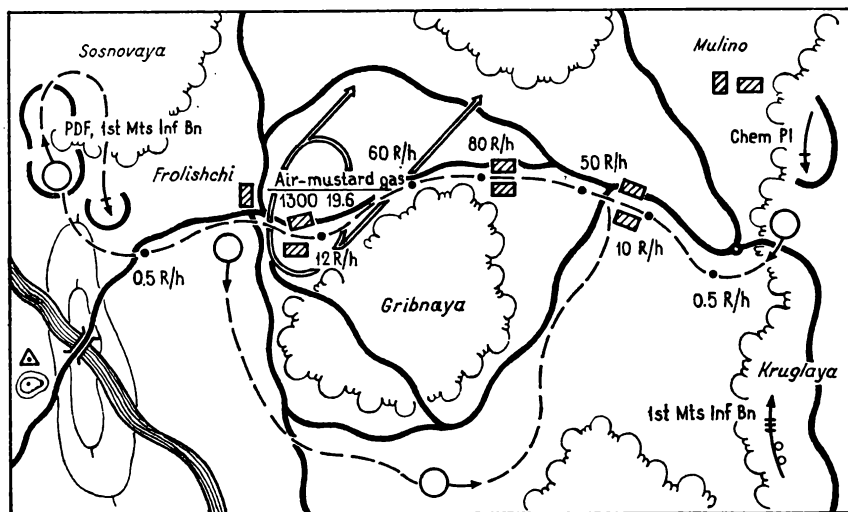
Before the lesson, the officer and the sergeants checked the condition of vehicles, serviceability

of radio stations and on-board roentgenometers, signal flares and smoke hand grenades and the personnel's outfit. Following this, Artyomov issued topographic maps to the section commanders, supplied them with radio data, brought the tactical situation to their notice and assigned them the mission to advance to the departure area 2 km south of Mulino. On the march, the gas scouts worked up actions in response to a nuclear blast, a radioactive and chemical contamination warning signal, and a sudden "enemy" attack.

After the platoon had concentrated at the designated location, the commander inspected the arrangement of special vehicles and their camouflage, and set a task for the observer who took up station on the windward side. In the meantime, the sergeants made ready the radio stations, roentgenometers, roentgenometers-radiometers and chemical agent detector kits, and the gas scouts the automatic gas indicators. Special attention was given to tuning the instruments' photoelectric circuits using the light filters, to preparation of indicating solutions and to adjustment of the drop size. The drivers performed a check inspection of the vehicles and special automotive kits.

When all vehicles were ready, the platoon commander assigned the subunits a radiation and chemical reconnaissance mission on the motorised infantry battalions' advance routes. The officer took his place at the head of the column, which enabled him to supervise the actions by the chemical reconnaissance party. He instructed the commander of the tail vehicle to process the data received from the recce parties.

At the road junction, Artyomov issued the narrative on radioactive contamination of the terrain. Using a roentgenometer-radiometer, the servicemen quickly located the beginning of the contaminated area and placed an insert with the level of radiation and measurement time into a poc-



ket of the contamination marker. Sergeant Dmitry Vinogradov plotted the relevant data on the map and transmitted them to the tail vehicle commander. The officer "increased" radiation levels every 2 or 3 kilometres to make training more effective. The rear limit for the contaminated area was defined at the clearing in Sosnovaya Wood. Behind it was the personnel decontamination facility (PDF) for the 1st Mts Inf Bn, where the trainees performed partial decontamination of the equipment and disinfection for the personnel.

The platoon commander checked the quality of the work done and issued another narrative: " 'Enemy' aviation has used chemical agents in the area of Fro-

lishchi — Gribnaya Grove. Reconnoitre the contaminated sector." On the southern outskirts of Frolishchi, the scouts detected oily drops and sensed the smell of garlic and mustard. The dark red colour of the filling agent in the detector tubes testified to the presence of mustard gas in the air and on the ground. Taking a sample and moving 50 metres back, the men put up markers on the roadside and began searching for detours. The party under Sergeant Vinogradov failed to take account of the wind direction in the ground layer, trying to find by-pass route on the leeside. The mistake was corrected by Sergeant Aleksandr Kuzmichyov's men. They found out that the wind was blo-

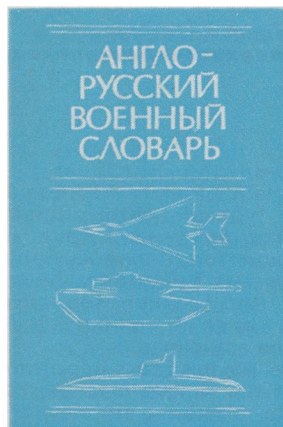
wing from the south-west, set fire to a hand grenade and began to search for a detour by the road to Gribnaya Grove.

The experienced officer noted other errors in his subordinates' actions. Sergeant Aleksei Tsiklov's men, for instance, put up contaminated area markers right behind road bends and too close to the carriageway. In real battle conditions, the observers in motorised infantry subunits could overlook them and their vehicles could knock them out. As a result, the scouts got lower marks.

On the whole, the exercise was quite instructive. The gas scouts consolidated their skills in handling the instruments. And the sergeants learned to work with maps better.

BOOK REVIEW

New Edition of Dictionary



The Military Publishing House has issued the two-volume "English-Russian Military Dictionary" under Valery Shevchuk, D. Sc. (Philology) and Vladislav Polyukhin, Cand. Sc. (Philology). It is a third edition, revised and supplemented after the previous 1968 edition.

The new edition is necessary because in the past 20 years new military words and terms have come into existence pertaining to all spheres of armed forces' activities in the English speaking countries — the USA, Britain, Canada and Australia.

The compilers of the dictionary paid special attention to the new terminology that has penetrated literature and periodicals due to the recent rapid development of military technology in the USA and other NATO countries (especially missile and space armaments) and the possibilities of its use in tactical and strategic operations.

The dictionary will prove a good textbook on military vocabulary. Being the most complete ever published in the USSR or abroad, it presents an up-to-date picture of the English military-terminological vocabulary. It contains terms and phraseological collo-

referring to all fighting services. The terms predominantly cover questions of tactics and strategy, military and operational art, combat use of troops, their control, and also organisational structure, armament, personnel procurement, support, army service and others.

Considerable space is given to words and phrases referring to the US and British strategic offensive forces, their nuclear missile weapon systems and space combat means. Due to the rapid pace of these weapons' development and sophistication, a number of terms have appeared since the dictionary went into print and thus could not be entered. So the military publishers intend to issue regular supplements to the dictionary.

The dictionary has over 70,000 lexical units and combinations (20,000 more than in the 2nd edition). The alphabet-cluster system is used in placing the con-

cepts. The spelling system adopted is American. The supplements give information on military ranks, principal orders and medals, designations of aircraft, missiles and electronic equipment, as well as other reference material on the US and British armed forces.

The dictionary is meant for military and civilian specialists, translators, teachers and cadets at military educational establishments, college and institute students, in the USSR and abroad. As practice has shown specialists working with French, Spanish, German, Italian and other foreign languages can make use of the dictionary too.

The "English-Russian Military Dictionary" published by the Military Publishing House meets the most modern requirements of military lexicology.

Colonel
Aleksei TUROV

PRIDE OF THE HOMELAND

Colonel-General
of the Air Force
Valentin PANKIN,
Chief of Staff,
the Main Air Force
Headquarters, Merited
Military
Pilot of the USSR



The Soviet people and its Armed Forces celebrate USSR Aviation Day every year on the third Sunday in August. The holiday is a sort of review of achievements of the Homeland's aviation science and technology and Air Force personnel.

The country's Air Force lives up to its designation. It is capable of fighting for air superiority, delivering powerful air strikes at land and naval forces, destroying lucrative targets in the enemy rear without entering his air defence area. The Air Force can successfully support the Land Forces and the Navy, cover them from the air, disrupt enemy communications, perform troop landing and dropping, conduct air reconnaissance, and tackle many other missions. The Air Force is equipped with top-class materiel equalling foreign analogues. Several generations of aircraft and helicopters appeared after World War II.

THE SOVIET Air Force's development is based on the principle of reasonable sufficiency for defence. That is proved by its structure. The USSR possesses a comparatively small number of heavy strategic bombers intended for air strikes. The USAF is equipped with 588 such aircraft, while the USSR has 162. Then, 161 US bombers carry cruise missiles. The index is 72 for the Soviet Air Force.

We don't strive for quantitative superiority over the NATO countries. Our aim is to hamper the aggressive intentions of the most reactionary imperialist quarters and provide a reliable defence of socialism and security for our Homeland. However, some Western circles, in the NATO countries particularly, continuously speak about growing might and aggressive ambitions on the part of the Soviet Union and about a Soviet military threat. But let us see who threatens whom and with what.

The Pentagon brochure "Soviet Military Power" maintains that NATO (not including the French and Spanish air forces) enjoys a 1,150 aircraft superiority over Warsaw Treaty in strike aviation. Our estimates are 1,400 planes. These facts and figures show the real picture.

MASTER CLASS

CAPTAIN Aleksandr Lichkun was flying an intercept mission, when the sun was at its zenith. The dazzling rays struck the cockpit, hampering observation. The pilot drew the blue light filter. The sun was no longer a hindrance. The powerful engines easily propelled the plane upwards.

The angle of climb was very steep. Aleksandr was almost lying on his back, the position a pilot assumes during an Immelmann turn. The plane went on climbing. It obediently responded to the slightest movements of the controls. The pilot and the machine seemed to merge.

It was not long since Captain Lichkun had begun training to fly an unfamiliar type of fighter aircraft. He had accumulated more than a thousand hours of flying on another machine, supersonic, manoeuvrable and all-weather. The plane he was flying now, however, was every pilot's dream. And Lichkun, too, envied his colleagues who flew it. "In an air combat," they said, "this fighter will overcome any g-load."

Manoeuvrability is a fighter plane's most important feature. Any tactic will fail if the winged machine becomes unmanageable in battle. Mastering the new aircraft, Aleksandr uncovered its new potentialities every day. It seemed at times that they were inexhaustible. The desire to fly the fighter was becoming as strong as the urge to quench hunger or thirst.

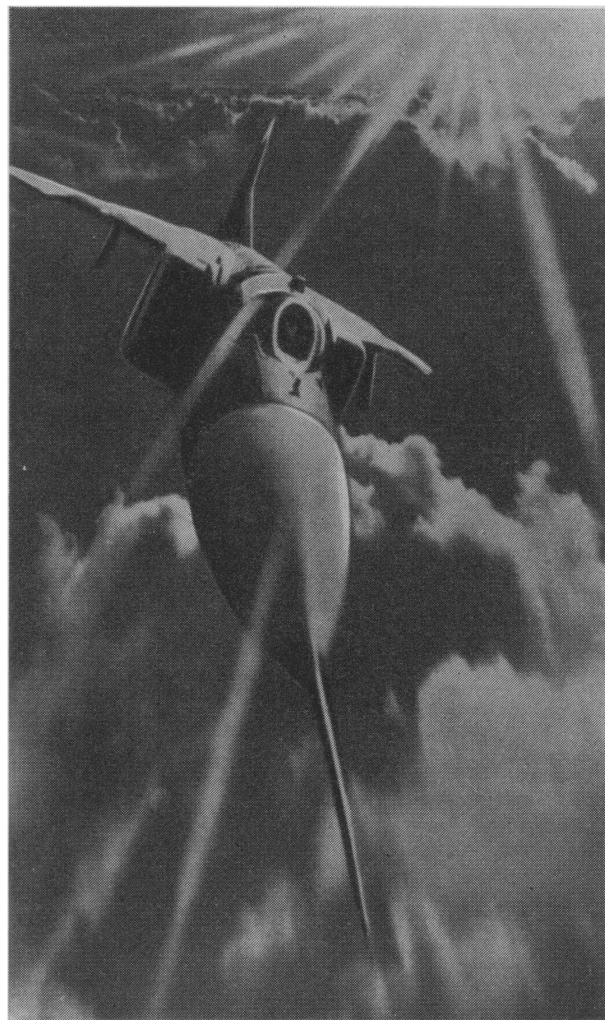
The ground is far below. Up in the stratosphere an "enemy" is trying to break through to the guarded installation. He is sure that his clever tricks have misled the flying control officers at the command post and the pilot who has taken off to intercept him.

The "enemy" sharply changes the flight profile: he dives, decelerates and resorts to active jamming. The plane position indicator at the command post is strewn with light-yellow blips. One of them is the target. Guards Captain Vladimir Kravtsov, a flying control officer, is closely watching the instrument. Like the

Though the USSR lags behind the USA in strategic bombers and strike aviation in Central Europe, it doesn't increase the number of aircraft but, vice versa, proposes reduction in adequate proportions for both sides. It is not our fault that our proposals fall on deaf ears.

In the obtaining situation the USSR Armed Forces' personnel, airmen included, are constantly improving their combat skill so as to meet a well-equipped and mighty enemy at any time. The Air Force units and subunits creatively search for the most effective training forms and methods and seek to improve materiel and equipment. We welcome airmen's initiatives aimed at developing and introducing into practice unacademic solutions, new tactics which would allow us to use aircraft to the utmost. In the course of flying tactical exercises and range firings crew, wing and squadron commanders, HQ and CP officers hone their skill to command and control making use of automatic control systems. During exercises a situation is created approximate to the possible character of actions of a probable enemy.

An officer's professionalism manifests itself fully during combat in the course of flying tactical exercises in complex and sometimes even extreme situations where will-power, decisiveness, courage and self-control are needed. Living up to the glorious combat traditions of Soviet airmen, today's pilots perform excellently in peace time and during their service in the Limited Contin-



interceptor pilot, he has long been engaged in a duel with the "enemy", trying to fathom his intention and forestall his moves.

Various computers help the flying control officer. The "intelligent" machines receive data on the "enemy", compute different versions, suggest the most favourable method of fighting him, and issue the requisite commands to the interceptor.

Captain Aleksandr Lichkun is attentively watching the readings of the instruments. A hand twitched in one of them; it moved right and then left, indicating the right course. The interceptor pilot outmanoeuvred the "enemy" by just a moment; this moment, however, proved sufficient to decide the outcome of the battle.

A special annunciator displayed the conventional signal "Turn on the sight!" The pilot snapped a toggle switch. The target blip was now clearly seen on the light-blue screen. But it was surrounded by false tar-



Guards Captain Aleksandr Lichkun

Photo by Sergei FYODOROV

gent of Soviet Forces in Afghanistan. Among them are Heroes of the Soviet Union officers: Vladimir Kucherenko, Sergei Filipchenkov, Vasily Shcherbakov, Aleksandr Railyan and others. They serve as an example of love to the Homeland, military gallantry, professional skill, initiative and personal discipline, and carry away other airmen to achieve new and higher results in combat training.

Any business must meet the demands of the time. Elimination of inertia and negative tendencies which hamper the progress in combat readiness and a bold search for new approaches characterise the activities of military collectives today. The current readjustment of work in air units and subunits is aimed at putting them to a new and higher level of organisation and discipline.

line for personnel, gaining maximum effect from every flying hour, and getting rid of formalistic methods and routine approaches in combat training. Today's trend is less chat and more business. The major criteria for the work done are a higher combat skill and readiness of crews, units and subunits, and accomplishment of combat training plans with no flying incidents or prerequisites to them.

The Air Force personnel celebrate their holiday in the heat of the summer combat training period. The Soviet airmen persistently improve their professional skill and enhance vigilance and combat readiness. They stand on guard of peace and socialism together with all servicemen of the USSR Armed Forces and their Warsaw Treaty comrades-in-arms.

gets. The officer switched on the anti-jamming equipment. The decoys disappeared, only the "enemy" blip remaining on the screen.

"One five!" Guards Captain Kravtsov called the interceptor pilot's call sign. "Distance to target..."

"Target seen. Attacking!" Aleksandr pressed hard the firing button on the control stick.

The aerial camera shutter rattled like a quick-firing machine gun. The "enemy" made a sharp turn, then a split-S, and dropped like a stone, trying his best to break away from the interceptor. All in vain. Lichkun forestalls him and imposes his own pattern of combat: manoeuvre-speed-thrust. Obedient to the pilot's will, the winged machine always assumes more advantageous positions.

The two planes circle in a huge merry-go-round, streaking the sky with white condensation trails. It looks very beautiful from the ground. But looking at the pilots up in the cockpits, you will see hot drops of sweat rolling down their foreheads from under the headsets.

Captain Lichkun attacks again and again. He opens fire from the camera gun at steep turns, when the plane seems to be cutting the skyline with its sharp wing, and firing short aimed bursts on the vertical, when the g-load seems unbearable. Despite the pilot's young age, you can trace a master's hand in the exquisite piloting technique and the ability to keep tactical superiority over the "enemy." Aleksandr learned this from his senior comrades in the Guards fighter regiment with whom he serves now and those who fought with the unit in the last war.

Twenty flyers from the famous regiment became Heroes of the Soviet Union during the Great Patriotic War. The nazis knew the Guards fighters by their swift attacks, daring manoeuvres and accurate fire. Keeping in mind a precept by the celebrated Russian general Aleksandr Suvorov which says that the enemy must never be counted but beaten, the Soviet airmen resolutely engaged superior nazi forces.

Many kind words have been said about Soviet flyers' front-line friendship, specifically their readiness to sac-

rifice their lives to save a friend. This feature came to their rescue more than once at crucial moments. Covering each other in battle, they courageously attacked the enemy.

In the Guards Order of the Red Banner and Orders of Kutuzov and Aleksandr Nevsky Proskurov Fighter Regiment named after the Leninist Komsomol, the art of winning is handed down from generation to generation. Marshal of the Air Force Ivan Kozhedub, three times Hero of the Soviet Union, who served with the regiment in the last war, is a frequent guest. He shares his front-line experience with young airmen and insists that they constantly upgrade their proficiency; he regrets being unable to master the equipment in service with unit today.

"These aircraft," the Marshal says, "open up the way not only to the stratosphere, but to outer space as well."

These words are no exaggeration. Fighter pilot Pavel Popovich started off into outer space from this glorious regiment, to become its 21st Hero of the Soviet Union.

Today's Guards airmen are proud of the regiment's combat traditions, adding to its Colours' glory. It has become a rule that when a pilot completes a refresher course giving him the right to and acquires practical skills in flying a new type of aircraft, like Guards Captain Lichkun, he is to engage an air "enemy." The battle over, the whole regiment meets him at the airfield in a solemn atmosphere.

The ceremony of initiation into fighter pilots is really unforgettable. The crimson silk Unit Colours adorned with a Guards ribbon and orders flutters in a light breeze. Smart-looking aircraft, the flyers' formidable weapon and reliable winged friends, are ready to take off any moment. They seem to be looking right into the men's eyes, imploring them not to let them down. Guards Captain Aleksandr Lichkun feels his heartbeat quicken.

Aleksandr ANDREYEV

THEY SAFEGUARD THE HOMELAND

A PASSION FOR FLYING



Senior Lieutenant Boris Chikilevsky went home in the same bus as before. He took his usual seat by the window. His fellow airmen were being funny and he felt really happy. As the bus rolled on, he sat recalling his twenty-four years.



There had been neither aviators nor army officers among the Chikilevskys — except for the men who joined up in the last war (1941—1945). But then it was a war which broke out for the whole nation. Boris's father had served his time and had now been a railway electrician for more than twenty years. His mother was a post-office employee in Minsk. Boris was their only son. They wished he would follow in their footsteps; but their little son dreamed of flying the skies.

When the father noticed his son's interest in machines, he began to take him to the railway shop, hoping that one day his son would find a trade in it. His son, shortly after he finished school, said resolutely: "I'm going to an air force school. I want to be a helicopter technician."

His father frowned and his mother wept as they saw him off. Of course, they were not happy: now they had to go home where they would spend long, lonely months.

The cadet years flew by swiftly, like a train of larks in the sky. His first commission, his first garrison and his first helicopter mission as flight mechanic followed. When he landed after that first flight, he resolved that aviation was his life.

In 1985, Senior Lieutenant Chikilevsky went to Afghanistan. He had various missions to perform there. He flew to the frontier areas to do reconnaissance and to deep mountain gorges and passes to track down caravans carrying arms and ammunition. He had head-on

attacks on hostile machine guns, and anti-aircraft guns. He shielded paratroopers landing and convoyed columns of lorries. He rescued comrades from death.

One day Captain Nikolai Bagonin's two helicopters went to spy out a high-altitude mountain area. There had been a report that there was a large caravan carrying weapons stealing from the frontier into the interior of the country. Chikilevsky flew with the leader's crew. They detected the caravan and forced it to give itself away by firing. Reporting to the command, they returned home through a deep gorge. A meandering stream in the bottom of the gorge glistened in the sun. From time to time Captain Bagonin glanced at the rear-view mirror. The wingman, Captain Sushchevsky, flew in its position. When he left the gorge, he glanced once again. He saw the wingman listing to the port side in flames. He switched on the radio and called the captain. There was no answer. As the leader made a steep turn, he saw a number of parachute canopies unfold over the gorge, drifting away by the wind.

Chikilevsky scrutinised the area where Sushchevsky's crewmen were to land. In the ruins of an old fortress, he caught a glimpse of suspicious figures. He fired a long burst from the guns.

The helicopter circled over the area until a Mi-8 cargo helicopter arrived. Chikilevsky protected his comrades with machine-gun fire all the time.

... One day the crew had been ordered to convoy an airborne troop landing. The flight proceeded as usual,

without any complications. Most of the Mi-8 helicopters had landed airborne troops on a high-altitude platform when a high-calibre machine gun started firing at them. Captain Mikhail Pukhov forced his helicopter into a steep dive. It seemed that the machine would not stand the stress. Boris Chikilevsky blacked out for a moment from the strain. However, the helicopter came into position accurately and overwhelmed the target with heavy machine-gun fire.

Pukhov drove the machine out of the attack just above the ground. At that moment another machine gun went off. A heavy blow threw Chikilevsky from the machine gun. He felt a pang of acute pain in the right arm and in the right eye.

"Seems I am injured, CO," he shouted in a hoarse voice.

"We are returning," Captain Pukhov retorted. "Be patient, Boris!"

In the hospital, after operation, Boris was told that the bullet had crushed his arm joint and a fragment of the helicopter's skin dislodged by the bullet hit his right eye.

The wounds were serious enough for Chikilevsky to be discharged. He could not give up his ambition. He wrote one request after another to the command. At long last he was allowed to stay in the army, but not in active service. This meant that he would never fly again. He made up his mind not to give up. Treatment and severe medical commissions followed. He felt relieved only when he was commissioned into a helicopter squadron.

... He had to go by taxi from the hospital to the airport, then after a two hours' flight again by taxi to see his relatives, the faces of his father and his mother where he would take a full breath of the spring air of the town where he spent his boyhood and youth. The suspense seemed too great to bear as he approached the native house. At the airport there was an unexpected delay.

A pretty girl in a dark-blue Aeroflot uniform looked over his documents and let him into the check room. Routinely he put his case on the moving conveyor and stepped over into the stationary metal detector. There was a jarring bell sound.

"Take out all metal things, please," said the check official.

Puzzled, Chikilevsky produced some coins and a bundle of keys from his pockets. He stepped in again, and the bell went off again.

"Let's have another try," urged the girl with a smile.

Boris unscrewed his distinguishing badges. The bell went off again. Some passengers looked at him with curiosity. The check girl did not smile any longer. At last Chikilevsky had a brain wave. These were the metal rods that the surgeons had put in his right arm joint!

For nearly two years Senior Lieutenant Chikilevsky served as a technician in the maintenance group. He was through much trouble at first, and it seemed to him that he was a nuisance to the whole squadron. He was unable to do the simple job of tightening a bolt proper-

ly. His right hand did not answer to his will, and he did not know how to control his left hand yet. He caught the sympathetic glances of officers and praporshchiks, and ground his teeth at the thought that he was powerless to do anything.

The man who helped him get through the hard time was Captain Viktor Perfilyev. He was a good specialist and a kind man. He was compassionate with the new subordinate, and did not allow him to lose hope. He urged Boris to train his right hand daily. In a few months Chikilevsky felt that his fingers could obey him and were regaining strength. One day, when he made notes, he suddenly saw to his amazement that his handwriting had returned to the normal.

... The missions were over well into the night. Dusk covered softly the field. The evening glow was shining over the forest. Chikilevsky was walking leisurely along the narrow taxiway, taking full breaths of fresh air. Somewhere at the parking place the last engine of the newly arrived helicopter gave a roar and came to a standstill. The airfield was coming to rest... There would be bustle the next morning again. And Senior Lieutenant Boris Chikilevsky, bearer of an Order of the Red Star, would come here again to meet and see helicopters in and off. And the skies, boundless and haunting, would be as high as before.

Major Vasily ZDANYUK

2 — In 1930 during the exercises of the Moscow Military District near the city of Voronezh a landing party was dropped in the "enemy" rear for the first time in military history. This date is the birthday of the Soviet Airborne Troops.

5 — 1943. On this day 45 years ago the Soviet troops liberated the cities of Orel and Belgorod from the Nazi invaders in the course of the Battle of Kursk. To celebrate the occasion the first cannon salute was performed in Moscow. There were 354 salutes in the capital during the war.

5 — 1963. 25 years ago representatives of the Soviet, US and British governments signed in Moscow the Treaty on Banning Nuclear Weapon Tests in the Atmosphere, in Outer Space and Under Water. More than 100 states followed suit.

15 — Iona Yakir (1896-1937), Soviet military leader, was born. CPSU member from 1917. Joined the Soviet Army in 1918. During the Civil War commanded a Red Guards detachment, and divisions of the Southern and South-Western fronts. From 1925 commander of the Ukrainian (later Kiev) Military District. From 1930 through 1934 member of the USSR Revolutionary Military Council. He was also a member of the USSR Central Executive Committee. Awarded the Order of the Red Banner three times.

21 — 1943. Suvorov military schools were established 45 years ago. Named after great Russian military leader Aleksandr Suvorov (1730-1800). The purpose of these secondary educational establishments was that of preparing young men for entering higher military schools. There are now eight Suvorov schools in the country with two years training period.

25 — 80th birth anniversary of Aleksandr Raspletin (1908-1967), Academician, Hero of Socialist Labour, outstanding designer of Soviet radio and electronic equipment. Designed an airborne radar and a sector scan radar. Participated in the creation of radio-guided systems.

THE target missile fired by the simulated enemy took a sudden turn and headed for the vessels protecting the target practice area...

At once the antenna dishes of the striking group's vessels started nodding, as if in sur-

commander for anti-aircraft defence.

"If the target had not resumed its former path, we would have knocked it down," said the commander, with confidence in his voice. "We were in full readiness."

cask overboard. The signaller watching this quietly suddenly shouted: "A floating mine starboard!" — and the automatic guns riddled the "mine" with bursts of fire.

The boatswain actually acted as a token hostile side.



prise — the missile had been intended as a target for their AD guns. The signallers, binoculars in hand, watched to see what would happen next.

The destroyer *Bezuprechny* was keeping guard on the edge of the target practice area. Its mission was to prevent casual ships or boats from entering the area.

The destroyer's commander, Captain 2nd Rank Viktor Nechipurenko, discussed the incident with me later on, as we sat in his cabin, in which I saw two prize cups the destroyer had won last year, one from the Navy Commander-in-Chief for gun training and the other from the Northern Fleet

It seemed to me that he regretted that he had missed the opportunity to hit a target and that he would never miss one if something of the kind happened.

Seamen in training often deal with imaginary token enemies rather than ships, planes or target missiles. Invisible, they pursue seamen like a shadow throughout an exercise, laying token mines or firing guns and missile launchers to test the fitness of the seamen for action in unpredictable situations.

Long ago I happened to see the procedure aboard a veteran cruiser. The boatswain at the forecaskle was ordered to push an empty

He performed his duty in full earnest, throwing another empty cask over the port side in a minute.

Seamen, even when they engage a simulated or token enemy, must do their best. We can liken this to shadow boxing when a boxer punches an imaginary opponent and gets utterly exhausted after ten minutes. Now, Captain 2nd Rank Nechipurenko confirmed that every training battle, if it is conducted under simulated war conditions, causes great tension and, consequently, exhaustion.

Ancient ritual war dances were indeed a kind of training battle in which warriors performed weapon drills. But

they did not seem to be satisfied with rituals as such, either because they lacked something or because there was too much conventionalism about them. It occurred to them then that an enemy must be materialised or a token of an enemy created. Thus targets emerged. They made a training battle more life-size and more warlike. Targets were decorated in a certain way to arouse feelings in soldiers. Later targets were used for more pragmatic purposes — to show levels of fire training.

Targets for naval practice were much more difficult to build than elsewhere. The essential requirement was that a naval target must keep afloat. Thus battle practice targets (BPT) appeared that are still used.

As is known, BPTs were built of boards no less than an inch thick to provide sufficient surplus buoyancy and were moored to an anchor when in position.

In naval gun training competitions, the destroyer *Bezuprechny* also used BPTs for shooting practice (Modern BPTs are not all-wooden, being ingenious complex structures). After shooting, the destroyer made for the target to see the results. A NATO vessel was already cruising nearby, evidently interested in the results too. The results were really good: a target whose buoyancy was much higher than that of a ship was found half sunken.

Naval gunners did not consider moored targets satisfactory for all ends; they devised mobile targets.

"Mobile targets for coastal and naval artillery simulate

hostile ships, sometimes even those capable of fast speed. A mobile target is usually a latticed wooden structure mounted on a raft or skis tugged along by a fast tugboat using long (up to 200 fathoms) towing-ropes with floats," says a pre-revolution encyclopaedia.

The technique has survived to this day. In addition to tugged targets, there are self-propelled targets known as target ships. There are also underwater targets simulating the noise and other characteristics of a submarine. Underwater targets are usually sophisticated devices controlled by its own programme and fitted out with various simulators and a miss indication system. Underwater targets are re-used many times.

Aircraft became a serious threat to naval ships, but anti-aircraft training methods were soon invented. Balloons were used at first. A naval anti-aircraft training balloon usually carried a note indicating the address to which it should be returned. A holed balloon envelope was often re-used after repairing. Kites were also used extensively because they could stand many hits. Kites used in the Russian army and navy were types designed by engineer Kuznetsov and Lieutenant-Colonel Ustyagin.

Of course the balloon cannot be used as a token of a modern jet plane or missile, at any rate because of the difference in speed.

... Under the terms of the air target shooting practice, the crew of the *Bezuprechny* was to be kept ignorant of the moment of an air at-

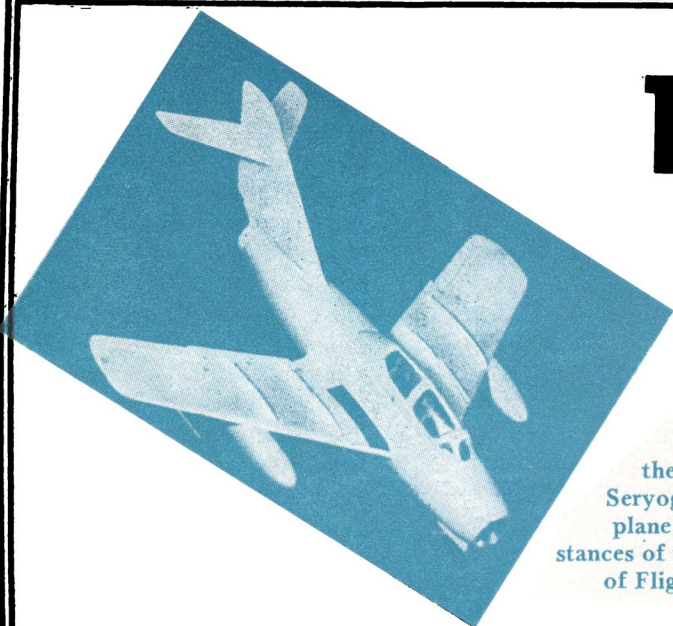
tack. At first a number of "enemy" planes flew over the ship. Their simulated attack and bombing were intended to distract the attention of the crew. The actual target appeared on the radar screen a few moments after. Immediately, radar section commander Starshina 1st Class Aleksei Kolmykov tracked the flight of the target and the gunnery officer Captain 3rd Rank Mikhail Bayev chose the right moment to pull the trigger. On the display screen flashed an asterisk, indicating that the shooting mission had been a success. A similar asterisk was then painted on the side of the wheel-house in recognition of the contribution of the whole crew.

Time-expired vessels and barges are sometimes used as targets. Their masts and superstructures make target practice more entertaining, and the effectiveness of shell charges as well as the skill of seamen can be tested better.

Will naval targets improve? Captain 2nd Rank Netchipurenko is sure they will. Electronic simulators will probably gain the ground, simulating shooting practice conditions while the ship is in harbour and does not need to start up its main mechanisms and systems. Electronic simulators will perhaps be so compact and simple to use that they will be played like desk games at any convenient moment.

The Navy is looking forward to new target practice methods.

Captain 3rd Rank
Oleg ODOKOLENKO



THE LAST FLIGHT OF YURI GAGARIN

March 27, 1968 was the day Colonel Yuri Gagarin, the first cosmonaut, perished. He and Colonel Vladimir Seryogin, also a Hero of the Soviet Union, died when their plane crashed during a routine training flight. The circumstances of the crash were treated in the article "Twelve Minutes of Flight" (No. 3, 1988). The experts have continued their work and found new evidence.

The results of the investigation allow us to confidently draw the following important conclusions.

1. The plane, its power unit and equipment were in order and, despite the extreme flight conditions, remained operational until the end.

2. There are no grounds to suspect sabotage (a bomb, or poisoning of the crew).

3. The professional training of the pilots, their readiness for the flight in question, and their health in general and on the day of the crash were all up to the highest standard. The crew were properly checked before the flight.

4. There was no in-flight collision with another aircraft, air balloon or birds.

But many questions remained unanswered, among them the main one: How did Gagarin and Seryogin get into trouble? The final

stage of investigation searched for the reason.

We needed additional information. We found that information in the archives: reports, certificates, maps, and tables. New facts were uncovered.

Deeper analysis of the weather conditions showed the following. The crew were informed that the cloud base (cloud amount 8 — 10) was at 900 metres. The actual figure was 400 — 500 metres in the training flight zone. Why the discrepancy? The point is that the weather reconnaissance reported the cloud only over the aerodrome.

It was also established that the ground radio altimeter was out of order that day. So the command could only find out the altitude of the plane from the crews. The cameras on the radar indicators were not working either. The radar tracking

lines were traced as the radar operators reported and conveyed via radio, which reduced accuracy.

There were other violations of flight control rules. The main violation was the complex situation which was formed in the airspace involved. At 10.20, one minute after Gagarin and Seryogin flew out, a pair of MiG-21s took off. Climbing out through the cloud, they overtook Gagarin's MiG-15. That violation could have even led to collision in the air, but this did not happen. At 10.21 another UTI MiG-15 (call sign 614) took off to check an engine which had just been repaired. And it flew close by Gagarin and Seryogin.

These and other new facts (we even established what the UTI MiG-15 numbered 18 looked like: the configuration of the plane and auxiliary fuel tanks, colouring,

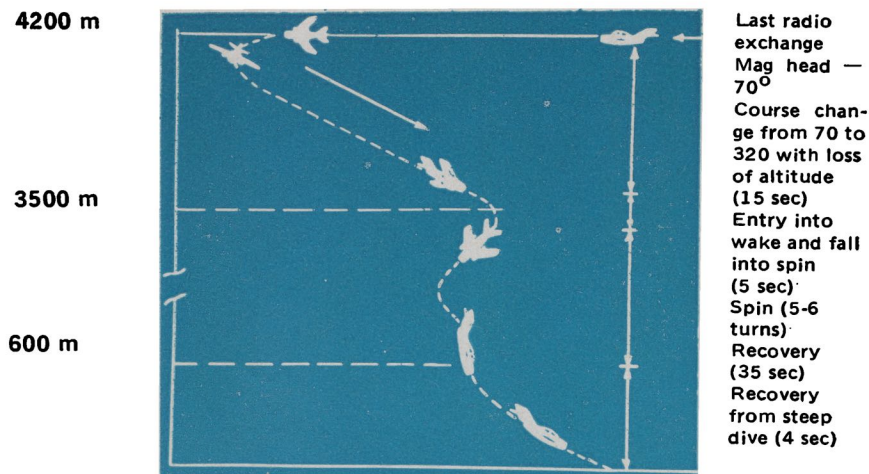
and figure and emblem size) allowed our group to analyse more deeply the final moment of flight. We made maximum use of computer modelling and past performance of this kind of aircraft.

We took account of the factor that the flight was performed with two auxiliary fuel tanks. Investigation revealed that maximum overloads were cut greatly when such tanks were used.

What then happened in flight? Receiving the command to return to base, Gagarin (call sign 625) began a turn which involved a slight descent (from 4200 metres to 3000 — 3500). The flight was proceeding between two dense layers of cloud, due to which the natural horizon was not visible.

Analysis of the trajectories of the two UTI MiG-15s with call signs 614 and 625 showed that they could have come dangerously close. The distance between them was just 500 metres, but there was no collision. The pilot of plane 614 did not notice Gagarin's aircraft, so we can assume that plane 625 was flying at the tail of 614. Evidently, getting caught in the vortex wake of the plane up front, Gagarin and Seryogin experienced a strong aerodynamic moment and entered a spin. Naturally the crew tried to pull the plane out of the spin while still in the cloud and without bearings. The computer model showed that they could have spun five or six times, during which events developed.

It would have been difficult to control the flight according to instruments: in



The Most Probable Picture of Last Minute of Flight

these circumstances readings would have been unpredictable. Also, the pitot-static tube was working in off-design mode and signals were transmitted late to the barometric altimeter: that would have given false altitude readings. The degree of error could have been as much as 200 — 300 metres.

There was, thereby, the following unfavourable coincidence. Both the weather reconnaissance data and the altimeter said there was altitude enough. So they calmly and confidently recovered their craft from the dive. They came out of the cloud at 400 — 600 metres with a dive angle of 70 — 90 degrees. It was too late to

eject. The actions of the crew during horizontal flight were most impeccable. The pilots did all they could but were two seconds short of time.

I am grateful to destiny for bringing me into contact with people like Yuri Gagarin and Vladimir Seryogin. They were fine representatives of the glorious officer corps of the Soviet Armed Forces. They were valiant, intrepid pilots. My colleagues and myself have applied all possible effort and knowledge to make sure the mystery around their last flight does not become entangled in rumours and myths. Our memory of the heroes must not be marred.

Lieutenant-General (Ret.) Sergei BELOTSEKOVSKY,
D. Sc. (Technology), Professor, USSR State Prize winner.

COMMUNICATION MUST WORK!



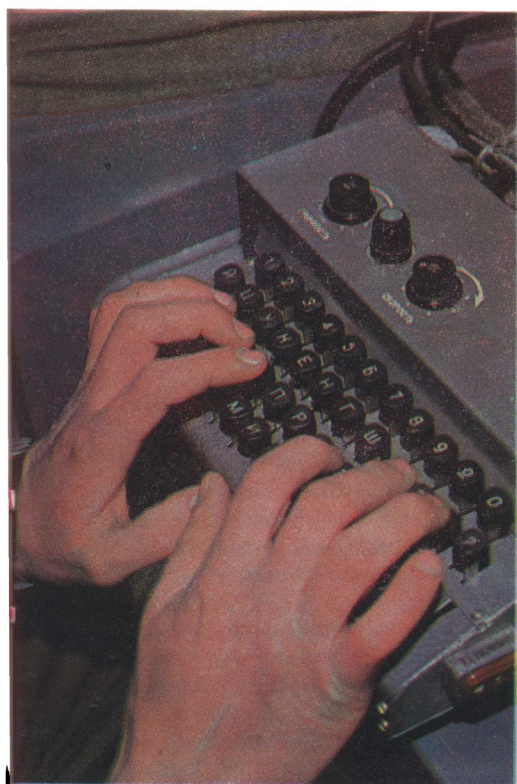
Communication is essential for any fighting service, especially for the Air Force.

Servicemen of this air unit persistently learn to handle the communication facilities entrusted to them. At field exercises and in classrooms they do their best to ensure efficient and uninterrupted communication. The personnel are successfully fulfilling the testing socialist obligations assumed for the summer period of combat training.

Photos:

- Deploying the station
- Commander of an advanced communication platoon Lieutenant Aleksandr Kuzmenko
- During a lull, Lieutenant Dmitry Yefimov, deputy company commander for political affairs, has a talk with servicemen
- Telephone operator Yefreitor Marina Bartova is by rights considered a top-notch specialist
- The radio message will be transmitted in time

Photos and story by
Mikhail SIDELNIKOV



BATTALION TECHNICAL TRAIN

This interview was taken by SMR non-staff correspondent Captain Nikolai Durnev from Major Aleksandr CHERVYAKOV, Mts Inf Bn deputy commander for technical service, on the training range, right after a technical exercise.

THE training combat is over and though the supervisors keep mum, the soldiers' eyes shine with joy: they are sure they have proved their worth. Indeed, the battalion performed well at a tactical exercise. After a prolonged march on difficult terrain, the battalion reached in due time the prescribed area, repulsed the "enemy" assault and successfully counterattacked.

Deputy battalion commander for technical service Major Aleksandr Chervyakov took part in dozens of such exercises and, maybe, therefore his answers are rather restrained.

Did you have any trouble with the equipment at the exercise?

None. In such cases I write in my notebook: "No failures."

What was your role at the exercise?

The condition of combat equipment was, naturally, my primary concern. On the march I headed, as I am obliged to, the technical train.

I doubt that the foreign readers of our magazine know what that term means.

I will be glad to explain. The primary tasks of the technical train are to determine where and why vehicles stopped, and render necessary assistance to the crews and drivers. Other missions include recovering vehicles that break down, towing faulty or damaged armaments and materiel to the repair area, or handing them over to the senior commander's representatives. By the way, the armaments and equipment can be repaired on the spot, in the nearest shelters, at halts etc.

The technical train is also responsible for topping-up the vehicles with fuel and lubricants, cooling and other technical liquids, assisting the crews in performing complicated maintenance operations, and rendering first aid.

In compliance with the exercise plan, technical trains are established in each battalion and sometimes in the companies operating independently. Their missions, composition and activities on the march are specified in the general logistical concept of the senior commander.

Can you apply these general requirements to the exercise that has just ended?

You see it will be better to show the work of the deputy commander for technical service and the technical train he heads on concrete examples, tell how the personnel remove troubles and do other jobs in difficult field conditions. Exercises are not typical in this respect. To be frank, I am very pleased that neither vehicle failed during that training battle, the equipment operated faultlessly. Nevertheless, the technical train had much to do.

Did you solve impromptu problems?

Of course. The exercise is the best master. The technicians worked hard preparing the materiel for the exercise and we had to give them the opportunity to check their proficiency in a training battle. The technical train received narratives at halts.

For example, on one of the vehicles we "detected" a leakage of cooling liquid. The company senior technician helped the driver determine the cause of the trouble: misalignment of the combined pressure-and-vacuum relief valve in the radiator cap.

Does that mean that on the march the drivers can perform only minor repairs?

Of course, it is ideal when the combat vehicle's driver is also an excellent mechanic. We aspire to this goal but it is hard to achieve. Besides, many types of repair require not only special knowledge and skills but also special equipment available only in the maintenance and repair vehicles of the technical train. And one more thing, the train technicians are the unit's best experts and capable of performing the most complicated jobs.

For example, the exercise director introduced the following problem: the lubricating oil pipe in the "seventh" vehicle is broken. What is one to do? It takes an hour or even

90 minutes to replace the oil pipe and the infantrymen had no such time. The specialists found the following solution: to slip a rubberised-fabric sleeve on the pipe's damaged part. It is fairly reliable and takes little time.

And what does the personnel of the technical train do on the march?

Their primary mission on the march is to keep a vigilant watch over the moving vehicles because every minute of possible delay may cost dear.

At halts the repairmen assist the crews in inspecting the vehicles. My duty is to receive reports of company technicians on the condition of combat equipment, consumption of fuel and lubricants, amount of spare parts available and to organise, if need be, the repair and refuelling of the vehicles.

And after the infantry joins the battle?

During battle the technical train is engaged in repair and recovery work. In attack every combat vehicle, its fire, armour and manoeuvrability, is essential. Our task is to be ready to send at any instant the necessary facilities to help repair a "damaged" APC or pull out a stuck vehicle.

So, we may by right say that the technical train has made its worthy contribution to the success of the exercise?

That's right. Most important is that the materiel was excellently prepared for the exercise. In general, I am content with my subordinates, although we have some unresolved problems.

What are they if it is not a secret?

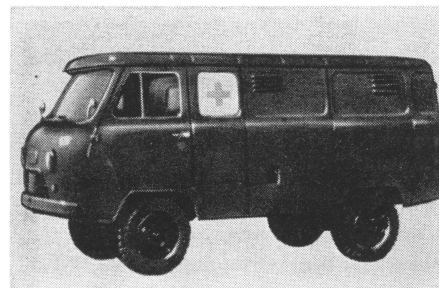
We must teach the personnel to adopt non-stereotype decisions. We have accumulated a wealth of experience in organisational maintenance which abounds in efficient methods of field repair. We must get them into practice as quick as possible.

Ambulance Vehicle UAZ-452-A

PERFORMANCE

Wheel arrangement	4x4
Body capacity	3 seats (including driver's) plus space for 4 stretchers
Mass	1,900 kg
Speed	95 km/h
Fuel distance	740 km
Engine power	75 hp

This specialised vehicle is a modification of the UAZ-452 van. It features good cross-country ability and high body capacity, is easy to control and reliable in service.

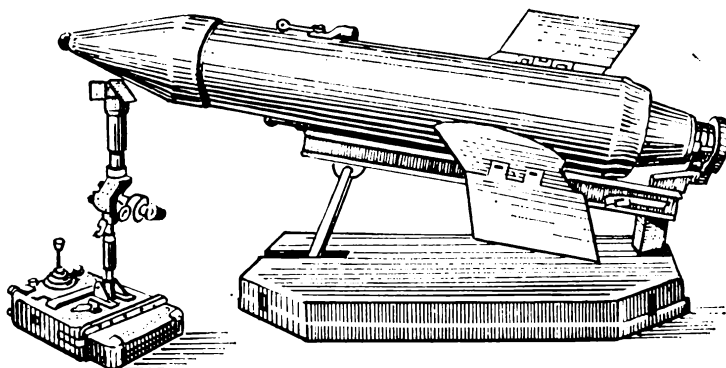


Portable Anti-Tank System (PTUR)

is based on an anti-tank hollow-charge guided missile and designed to destroy armoured targets and light fortifications. In flight the missile is guided manually via a micro-cable composed of several wires, which freely reels off a special bobbin. The portable anti-tank system is carried in three packs. The crew consists of three men. It takes the crew 100 seconds to prepare the system for firing.

PERFORMANCE

Missile calibre	125 mm	Maximum controllable	
length	860 mm	range	3,000 m
mass	10.9 kg	Minimum accuracy	
Missile mean		range	500 m
cruising speed	120m/sec		



WE PREFERRED to sacrifice the comfort of the Dresden hotel to two simple garrison beds, because we wanted to see the withdrawal operation for ourselves and to get to know the men involved. The command granted us the opportunity. In the garrison, we were handed a pair of soldier's high

ding to a schedule where even a minor departure is regarded as an emergency

Each morning we rose at reveille and washed and breakfasted quickly so as not to miss the start of the operation. Outside the depot building, we saw bellowing heavy

The withdrawal of the first Soviet shorter-range missiles OTR-22 (known in the West as SS-12) this February attracted some 150 correspondents from the world's leading press agencies, newspapers and television companies to Bischofswerda in the GDR. The Soviet missiles had been based at the quiet town near Dresden, with the consent of the GDR authorities, as an answer to the deployment of Pershing-2 and cruise missiles in Western Europe in 1983. The Soviet Union thus went ahead with the Intermediate Nuclear Forces (INF) treaty before its ratification. The dismantled missiles had a long way to go, across the GDR and Poland, to the destruction sites.

IN TRANSIT FOR PEACE



Commander of the unit Colonel Vladimir Yankovsky. His last report: "The order of the Homeland is accomplished."

boots and a warm parka. The missile regiment commanding officer Colonel Vladimir Yankovsky, noticing our surprise, said with a smile:

"Do as I command you. We are going to be deep in the forest and you'll be cold there, especially in the wind, if you don't put these things on."

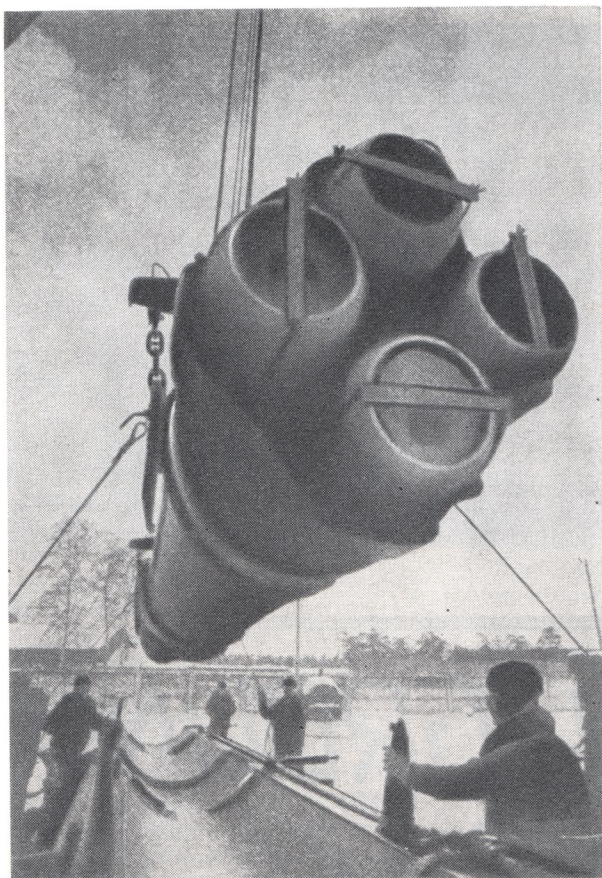
We passed the check point and entered the cantonment. There were signs of intense activity everywhere. It was not the orderless, hasty bustle one could see when a large civilian organisation moves house. Everything was done with precision, accor-

trucks waiting for green missile containers to get out.

We stood watching a missile being hoisted out of its container by a high-capacity crane. A long two-stager (with its warhead removed) was slowly moving overhead against the clear sky. Its body was filled with a mighty load of fuel, which, we thought, would never bring its nuclear warhead to a target. The missile had been removed from its container at our request: we wanted to photograph it "altogether" to show our readers what it looked like before being replaced in its container for shipment to a destruction

site. Odd as it may sound, the missile was lovely to look at. It occurred to me that it might have won the title of Miss Missile at some science-fiction beauty contest.

It was really a queer thing to see missiles being handled in the open, without usual security precautions.



At last we started off to the railway siding where the missiles were to be entrained. After the renowned German highways running between rural townships, one could hardly expect a good road between the pines of the hilly woodland. However, the 500-hp heavy trucks rolled along the road with ease, each carefully carrying one missile.

Later the first secretary of the Bischofswerda district committee of the Socialist Unity Party of Germany told us: "A thousand million people throughout the world are now looking to Bischofswerda, where our factory workers live, as well as to the

towns of Waren in the GDR and Hranice in Czechoslovakia. We see the Soviet missilemen off with a feeling of friendship; they have been trustful, reliable comrades. I am sure every one who really cares for the future of the world welcomes this step by the Soviet Union towards a nuclear-free world."

Besides the pull-out of the missiles themselves, there was a lot to be done there. It was necessary to dismantle and entrain auxiliary mechanisms, check out the missiles from the active alert list, help the officers' families move house and arrange lessons for schoolchildren so that there would be no interruption in their schooling in transit.

...We sat talking to the deputy commander for political affairs when a delegation of little boys, aged nine or ten, filed in.

"Comrade Colonel, we want to ask you a favour," asked one of the boys.

"Do," said the officer.

"We beg you not to leave behind Caesar, Aza and the other animals." The boys told him the names of their dear pets.

"All animals will go with us. The documents are already there," the officer said, in a consoling way.

The boys gave a cry of triumph.

Meanwhile, Caesar, a five-year-old white pony, which used to do chores five days a week and take children for a ride on weekends, was grazing peacefully, not knowing that his fate was being settled.

The last day came. The sounds of the march "A Slav Girl Said Goodbye" was ringing over the parade ground. During his 27 years of service, Colonel Yankovsky had moved house under the sound of the march eight times. It was the first time he did so abroad. Son of a Vinnitsa farmer in the Ukraine, he felt gratified that the regiment in his command was pioneering the historic mission.

Aleksei PANCHENKO
Photos by Aleksandr NAGRALYAN

"Iskra" Museum in Leipzig

On May 5, 1956, a museum of Lenin's Bolshevik newspaper *Iskra* (Spark) opened on Rus-senstrasse in Leipzig. Why Leipzig? Because it is the birthplace of the newspaper.

The museum is seldom empty. A never-ending stream of people from all over the German De-mocratic Republic and tourists from Poland, Romania, Hunga-ry, Bulgaria, Czechoslovakia, the Soviet Union and the Soviet Group of Forces come here. Not long ago, a group of Soviet servicemen led by Senior Pra-porshchik Romanenko visited the museum, seeking to learn more about Lenin and Bolshe-viks.

They were especially interested in the exhibits from the *Iskra* printing office. On the type-setting machine they saw the first issue of the newspaper. The name of the paper in bold letters. To the left of the title stands: "Russian Social-Democratic La-bour Party," with the famous epigraph on the right: "The spark will kindle a flame."

The first issue of the *Iskra* saw the light in December 1900, carrying an editorial, "The Urgent Tasks of Our Movement", written in Lenin's rich language, with irontight logic. The prophetic conclusion of the edito-rial was: "Before us, in all its strength, towers the enemy fortress which is raining shot and shell upon us, mowing down our best fighters. We must capture this fortress, and we will capture it, if we unite all the forces of the awakening proletariat with all the forces of the Russian revolutionaries into one party..."

At the museum stands a granite obelisk with a bas relief of Lenin. There are always fresh garlands at the obelisk, with dedications in different languages, a tribute from working people to their leader.

Praporshchik
Yakov BOIKO,
Group of Soviet
Forces in Germany

Can I write about the army, which seems so remote from me I do not even know the insignia of the army properly? Can I keep silent about it, now that the army has become so near and dear to me? My notes will probably sound controversial. As a matter of fact, I did not think I would write about it at all. Why did I then? I'll try to explain below.



DRILL GROUND ROSES

I HAVE just returned from the regiment in which my younger son is doing military service. I have not seen him for more than a year, since the day he took the Oath of Allegiance. He looked excited standing there on the frost-bound parade-ground, but tried to keep his voice as calm and steady as possible. I was moved to tears. I could not help it. It was not pity, but pride and affection, not only for my son,

but for all those youngsters standing to attention in uniform too big for them, with their thin necks and their hair cut short at the back. Just to think these boys would now be standing on duty to defend us all! The other mothers had tears in their eyes too, and we did not feel ashamed of our tears.

I must admit I longed to see my son all these months. I put off my second visit deliberately.

Of course one might think it had been cruel of me to do so. Besides, I sent him neither parcels with food too frequently nor monthly postal orders.

The reason is simple enough. First, I did not want him to be more privileged than my elder son who has already served his time. It was my principle of family social justice. Secondly, I prefer sound parental selfishness to blind parental love: sons must be able to cope with hardships and difficulties on their own, so that their parents could be sure of their maturing into manhood.

I was standing in front of my "little one", whose height was 190 cm. A former machine-tool operator, he was now an airborne troops private. He had to bend his head a little and I to rise on tiptoe to kiss his tanned, tough cheeks. The tan surprised me: I had expected to see an uncouth slim boy like the one he had looked while taking the oath. Smiling, my son said he had been as black as pitch last summer. I joked, lamely, that his cheeks were too big, but he said, seriously: "Why do you all back home think we in the army are undernourished?" I said that, when his brother had been in service, there had been some cases of undernourishment. Then my son said, in a severe voice: "We've got plenty of food now. Times have changed."

Talk about changed times! As I walked beside him, I said to myself, ironically, that his mind must have been "crammed" pretty well by his political workers. Was he going to discuss army perestroika problems with me? But he said:

"I wish you had come here in the summer, it's so beautiful."

I nodded, for I thought he was referring to the graceful buildings and magnificent trees of the southern city. Later I

understood that he meant something else.

The battalion Komsomol secretary led me to the staff house where my son was given a leave-pass. A grim-looking major appeared in the doorway. He introduced himself as the battalion second-in-command. I do not remember his name. Presently the major said:

"Do you know Polyakov?*"

"Polyakov what?"

"The writer." From the way he said it I gathered he was going to say "The scribbler", but controlled himself. "You've read his story 'A Hundred Days Before Demobbing', have you?"

I said I had not, somewhat embarrassed. I had not met the author either.

"If you happen to meet him, tell him not to try and make my acquaintance... His story is slander on our army! Look at the officers in his story. All of them are slow-witted, narrow-minded drillmasters... What a disgrace! Books of this type will teach no one to love the army, they can only teach one to loathe it..."

The major's sharp attack on the story made me shudder a little, but I forced myself to ask him what the story was actually about. The theme of the story, he said, was what is known in the army as "granddadism" ("Dedovshchina") — informal relationship between old-timers ("granddads") and rookies.

I understood why the major was so angry: no officer would welcome a glasnost of that kind.

Much to my surprise, my son and his buddies assailed the

story too, though they said they found many things in it worth revealing.

It turned out that the grim-looking major was the officer whom they loved more than anyone else. "The Old Man is an officer and gentleman," they said. Although a strict disciplinarian, he respected soldiers and treated them fairly, in a simple fatherly manner, without any sign of condescension. As I heard them say this, I felt suspicious again: Were they not frightened to speak frankly?

When I returned home, I asked my elder son what he thought about the story. He had served his time in the army and was now an undergraduate. So he had nothing to fear about, I thought, and would be frank with me. He did speak frankly:

"The story is written skilfully and honestly. But if you come to think of it, it is an anti-army story through and through."

Next day I got last year's No. 11 of the monthly "Yunost" and in the afternoon, on my way home, began reading it. I was so absorbed reading that I missed my stop. The story was not a long one, one could read it at one sitting. Oddly, as I read it, I had a sharp feeling of... injustice.

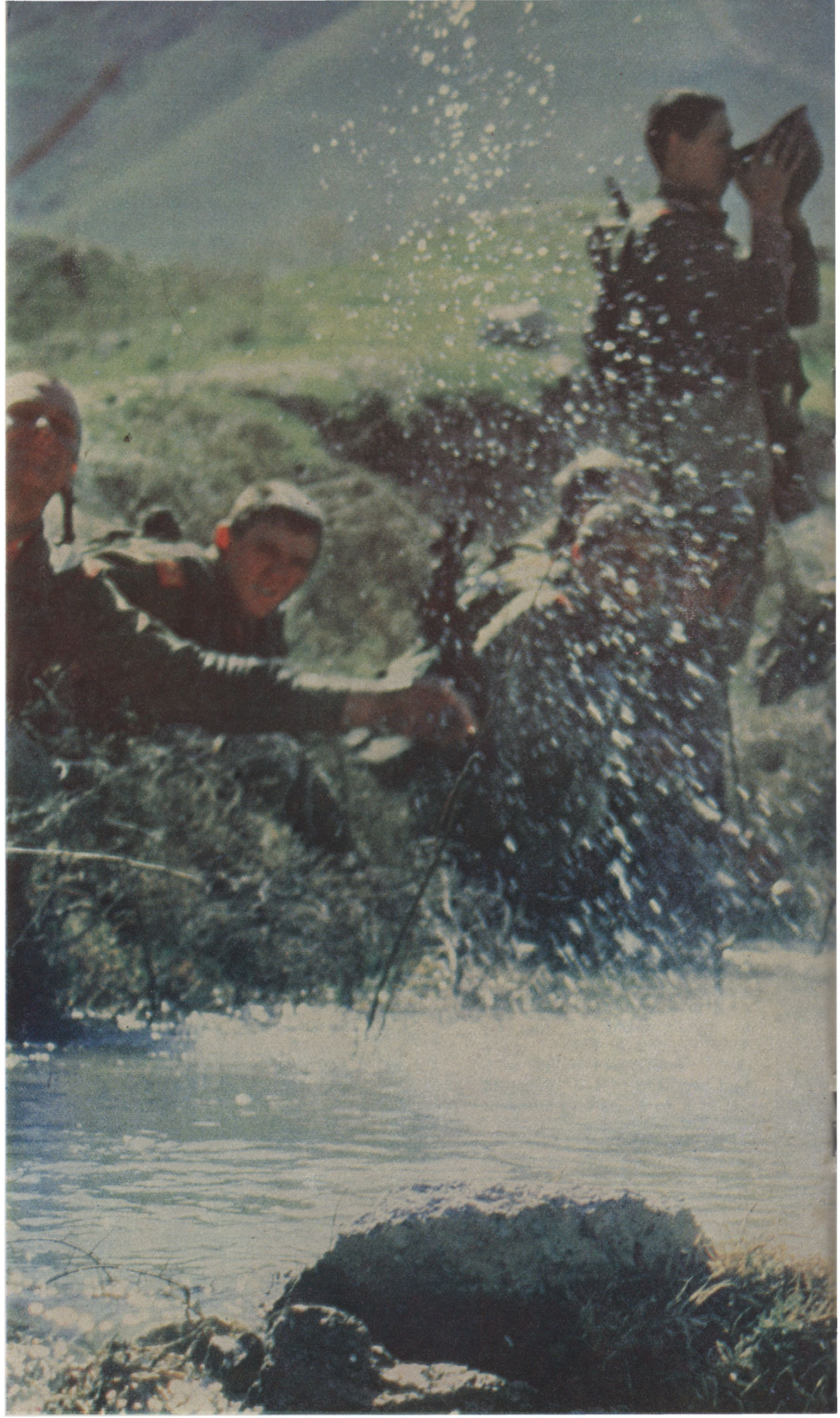
I want to make my point clear. I am not going to argue with the author. Nor do I want to defend the author from the major's attack. (There is no need to do so). I want to understand why common soldiers, both those who are now in service and those who had served their time, are not hailing the story as strongly as they might have been expected to. As a mother I want to understand why my sons, at any rate, have found the story so repulsive.

I read the story once again and little by little began to understand. It is not the texture

* Yuri Polyakov, professional writer, author of the story "A Hundred Days Before Demobbing" published in the "Yunost" magazine, No. 11, 1987.

AFTER A TRAINING BATTLE

Photo by Mikhail KLIMENTYEV





of the story but its tonality that may have affected them. The story is written with such ruthlessness and with such sweeping generalisation that the reader is forced to conclude that it cannot be otherwise in the army and that what the author has described does exist in every battalion. Which is far from the truth.

Genuine comradeship-in-arms does exist in the army, and oldtimers simply agree — and not take an oath — not to tyrannise rookies. The result is self-respect, faith in oneself and a steeled character.

Why is this not so in every battalion? What does it depend on? Yuri Polyakov's story has disclosed one major reason: an atmosphere of stagnation both in the army and in the country.

We all are well aware of this atmosphere and at the same time we all see this atmosphere in the army changing for the better, no matter how closed the army may seem (a subject some like to discuss with such obsession). So the story, like a long-shelved film, is no longer of current interest, as it might have been expected to be, and it annoys us because it describes the army of yesterday rather than the army of today. One may smile wryly: Is the five-seven years that it took the author to write his story enough for radical change? I must state that there is dramatic change in evidence after just one year of work. Indifferent attitudes in the army are being combatted seriously. I am not to say that "granddadism" can be swept

away overnight. Individual cases of it may break out now and then. Letters coming in at our newspaper say that rookies are now much less oppressed by their senior buddies and there are now fewer cases to be dealt with through harsh administration and punishment.

When I returned to the hotel, I asked my son to enumerate the most evident signs of change that had taken place in the year. He started doing it, in a serious businesslike way: first, new qualified officers came and speciality lessons became more effective, not just a waste of time as earlier. Second, off-duty time became more enjoyable: there was now a club, a swimming-pool, a sauna and a sports ground. Their subunit

HIGHER MILITARY EDUCATION:

The restructuring of society and fast advance of technology have pushed forward a most acute question — the professional level of cadres. This is a matter for the higher military school which prepares scientific workers and teachers for the educational establishments and research institutions sponsored by the USSR Defence Ministry.

FOR A number of reasons the system of training scientific and pedagogical staff that has taken shape does not fully meet the requirements of military research and higher learning establishments. The age of top-qualified specialists has increased. Those are professors, assistant professors, doctors and candidates of science. And that naturally hinders the development of science.

While the average age of specialists holding a doctor's degree in this country is 48, in the Defence Ministry establishments it is over 55, and for doctors of

military sciences 60 plus. And could one consider normal the fact that the average age of candidates of sciences is 47 versus a national 37?

Whence this state of affairs? We suppose one of the reasons is that the mid-1970s reform of the military school gave rise to a system whereby the Candidate of Military Sciences degree cannot be obtained before the age 35, and the Doctor's not before 45. In point of fact, a young man enters a military school at 17—18 to become a lieutenant at 21—22. To go on to a combined-arms academy, one needs an appropriate post which is only likely to happen only in 5 or 6 years. Before taking up a post-graduate course at a military academy, the young officer is to have completed an academy course and served then not less than two years. So the post-graduate course is finished at 35 or later.

According to psychologists, the optimum age for selecting a profession is 15—16. To our regret, the secondary school offers a programme of initial military training that cannot help schoolchildren choose a profession, to say nothing of preparing them for en-

SMR SUMMARIES

was not one for a music group, but their political worker had got instruments and found boys talented enough to play them. This, I believe, was a good contribution to fight against practices not prescribed by the regulations. In this fight, I believe, much depends on the officers themselves and their attitudes to men and service in general. Equally it depends on the men, above all on how good they have been prepared at home for performing military service.

I'll mention another discovery made by my younger son during his service. My son thinks himself a well read man. Now, he was astonished to find that one of his buddies, a Kazakh, knew Russian classics much better and could recite all Pushkin's poems by heart. Another buddy could

play several musical instruments, still another was a good tailor, still another could put straight any machine with his skilful hands. I was happy to hear this, partly because there was no risk my son would get stupefied amidst such talented boys and partly because I liked the true admiration with which he spoke about his buddies of different nationality. I was happy to see he had discovered a very important truth, a truth that cannot be taught by mere words.

Now, my own discovery: I saw bushes of roses on the drill-ground. Remember my son said: "It's so beautiful here in the summer." The roses were tended by soldiers themselves. As they are in blossom more than six months in that area, I think it

is really a good chance for them to smell and admire roses.

But military service is not roses all the way. There are many hardships and difficulties, major and minor cases of injustice, conduct and misconduct. There are faults and flaws.

Boys joining the army are not all alike and the ways they go through the mill are not all alike. Are they made to be all alike in the end? Not at all. They are still different.

Thus our boys are ushered into manhood. I felt confident for my son as I left the regiment.

Valentina
PONOMARYOVA

WHAT'S NEW

tering a military school. The specialised establishments — the Suvorov military schools — cannot cater for the demand, as there are too few of them. Hence the conclusion: the network of those schools should expand to enrol many more young men anxious to embark on an officer career.

However, restructuring is not synonymous to altering the existing order. The task is far bigger — changing stereotype thinking, people's psychology and attitude to training scientific and teaching staff members. We believe that the most gifted higher military school graduates ought to be picked out for military research and being trained as teachers, and they should also get recommendation for military academies and post-graduate examinations. While at the academy, the officers go through two or three active service periods (amounting to a year) in their future speciality. As a result, candidates of military sciences or in other fields, would be 25—30 years old. And at 35—40 they could make a doctor's degree and become professors.

For a military scientist, troops and their technical equipment are a constant subject of scrutiny. But

Colonel Yevgeny ZHURAVLYOV,
D. Sc. (Military)

to become a researcher or teacher, one need not go through every single step of the service ladder. The issue should be approached from a different angle. Employing scientific prognostication of further development of the military science, armaments and combat equipment, cadre resources should be created with a view to their ability to accelerate technology. We must make bolder plans for the future.

The military scientist does not only propagate knowledge and generate ideas but is also the one to help cadets and researchers grasp the subtleties of various aspects of the military science, investigation methods and modern culture in general. This calls for restructuring the professional training of the post-graduate officer as a future military teacher or researcher, along with profound training in the speciality and knowledge of the history of the development of the given field and mastering methods for accumulating such knowledge. As never before, knowledge is essential for the fundamental and social sciences: without them the military scientist and teacher cannot work out a clear-cut outlook.

The military higher educational establishments must produce specialists who immediately on graduation can engage in research on an up-to-date level and are aware of the state of affairs in their fields of research at a global level. The specialists should also be in a position to decide on the most effective ways of achieving the goal. And here a few words have to be said about mastering foreign languages.

Far not all commencing teachers and research workers have a sufficient command of languages. Statistics point to one in seven members of scientific research institutes or design bureaus or higher learning institutes can understand articles in the languages they are supposed to have learned at school, military school or academy. Almost none of the post-graduates or young scientists read systematically foreign periodicals in their fields of study.

Reconsidering values is, probably, one of the most typical features of our time. Correct names are being put to certain things that used to be praised to the skies. The process, though painful but necessary, is going on in the military educational establishments. So very hard are these perestroika steps. But they are part of our future.

That is why a firm knowledge of the fundamentals of the military economics and a command of the function-and-cost analysis methods should be an asset of every military specialist. All the more essential is it now to elaborate programmes for post-graduate course entrance exams in military economics and compile textbooks and handbooks on the subject.

Just one article cannot possibly cover all questions of training military scientists and teachers. My colleagues may take different views on the issues broached. One thing is clear: we must realise that our Armed Forces are now beginning a new stage of military structuring and the new military doctrine presupposes distinct approaches to tackling a host of issues and demands direct links with science. High theoretical and professional standards of military scientist training are essential for sustaining military parity. That is the call of our time.

ADJUTANTS AND ALL RANKS UP TO
CELEBRATED GENERALS REMINISCE
ABOUT THE GREAT PATRIOTIC WAR

LIVING MEMORIES

All through the war Viktor Tyomin, a Pravda photo correspondent, dreamed of photographing all front commanders together. A good idea. But try and get them all together at once!

Tyomin told Marshal Georgy Zhukov about his intention. The Deputy Supreme Commander-in-Chief liked the idea. He promised to help at the earliest opportunity. Regrettably, there was no opportunity till the end of the war.

On June 23, 1945, the eve of the Victory Parade, all famous military leaders got together to discuss the procedure of this historic event. Zhukov remembered Tyomin's idea, and asked him to come. Viktor raced out of the house — he had awaited this moment so long!

He seated eight Marshals of the Soviet Union and two Generals of the Army in a manner he had long pictured in his mind.

"This is the first time a correspondent has commanded us," said Zhukov with a smile.

I recently heard this story from Tyomin's wife. Listening to her, an idea struck me: what if I ask the generals' adjutants and special messengers to share reminiscences about their chiefs? There's no doubt they have a lot to tell. Memoirs are memoirs, but a living word is quite a different thing.

Lieutenant-Colonel (Ret.) Aleksandr Perfilov, former adjutant to Marshal Ivan Konev:

It was flattering to be Konev's adjutant, of course. But he was of a stern disposition.

Colonel (Ret.) Aleksei Grinenko, former special messenger to Marshal Aleksandr Vasilevsky:

Vasilevsky was an extremely decent man. Respect for subordinates was inherent in him. Here's

Those were grim years for the Marshal. But nothing could ever break his staunchness and courage and his faith in justice.

I remember very well the day author Konstantin Simonov came to his country house. After the unjust oblivion, Zhukov was not only to show up on the screen, but also comment on the events of the heroic battle for Moscow. It's no secret certain people hoped to see him a resigned old man. Nothing of the kind. Zhukov answered all the questions with his characteristic clarity and precision. He looked self-possessed and resolute.

Lieutenant-Colonel (Ret.) Boris Zakhatsky, former adjutant to Marshal Konstantin Rokossovsky:

During twelve years of service with the Marshal, I got many presents from him. But a hunter's rifle and a watch with my name inscribed are particularly dear to me. But sometimes I was reprimanded by him.

In the late period of his life, Rokossovsky worked with the Group of General Inspectors of the USSR Defence Ministry. Marshal of the Artillery Nikolai Yakovlev was secretary of our Party organisation. My duty was to collect membership dues. One day my Marshal taught me a lesson. When I entered his office to collect the dues, he said: "You are wrong in coming here. I as a Party member must come to you."

Lieutenant-Colonel (Ret.) Andrei Bludov, former adjutant to Marshal Kirill Meretskov:

Being seriously ill, Meretskov nevertheless wanted to write his memoirs. He was very particular about exact data and events. So I had to run about a lot to get the necessary documents. He sent me to archives several times a day or to his fellow-generals' places to specify a fact he doubted.

"Come on, Bludov," he would joke, "perhaps you'll go down in history, too."



Photo (left to right): Aleksandr Perfilov, Aleksei Grinenko, Ivan Pryadukhin, Boris Zakhatsky, Andrei Bludov; standing: Aleksandr Gorbunov, Viktor Fedotov, Vitolt Pechorkin and Vladimir Shipkov

Photo by the author

He always showed an earnest approach to any problem. Towards the end of his life Konev was appointed chief of staff for organising a youth nationwide march to the sites of revolutionary, labour and combat glory. More than once he crossed swords with ministries and other agencies, always coming out top.

The Marshal liked to spend his leisure hours in the countryside. He was a passionate angler, though he didn't like hunting. Once I saw him pulling hard at his fishing line. Either a big fish bit or the line caught a snag. Without a moment's thought, I dived into the water dressed as I was. "Thank you for your selflessness," Konev said, getting a handsome perch off the hook, "but it goes beyond your service duties."

an example. Vasilevsky was relaxing after a long journey, when a young lieutenant brought an urgent message. And imagine that he, Marshal of the Soviet Union and member of the Supreme Command GHQ, fastened all buttons on his jacket and only then said: "Call him in."

His ways were simple and democratic. Getting down to dinner, he would always invite us, officers, to join in. He also liked to ask us what we were going to do after the defeat of the nazis. Sometimes, he would give us personal advice.

Lieutenant-Colonel (Ret.) Ivan Pryadukhin, former adjutant to Marshal Georgy Zhukov:

Zhukov had many adjutants. I was with him in his last years.

At long last the manuscript of the future book was ready. The only thing that remained was the title. There were many proposals, but the gray-haired Marshal didn't like any of them.

"In Service of the People," he finally decided. "That must be the title."

Well, there was nothing to say about it. The title perfectly describes the contents of the life of Meretskoy, a military leader, a poor peasant by origin.

Colonel (Ret.) Aleksandr Gorbunov, former adjutant to Marshal Rodion Malinovsky:

It is hard to believe that Marshal Malinovsky didn't like Fridays. Up till now nobody knows why. On that day, he was meek as a lamb, apprehensive of some dirty trick. His apprehensions proved justified: he died on Friday 31st March, 1967.

Major-General (Ret.) Viktor Fedotov, former special messenger to Marshal Leonid Govorov:

Govorov was a peculiar man. Reserved and reticent by nature, he could quickly get his bearings in any situation, expressing his thoughts with particular clarity. Govorov was a versatile person: though fully given to his service, he was well posted about all artistic, scientific and technological news.

He didn't like to be photographed, refusing to pose before the camera. Never claimed any privileges or benefits.

Colonel (Ret.) Vitolt Pechorkin, former adjutant to Marshal Andrei Yeryomenko:

Yeryomenko justly enjoys the reputation of a strict and exigent chief. He regarded concern for soldiers as a warrant of victory. The Marshal generally began a review of a military unit with the

kitchen, as he held that a soldier can't do his best in line of service unless he is well fed.

I learned a great deal from Yeryomenko during the years I served with him. Thus, a prominent Chinese military leader visited the Soviet Union in the mid-fifties. He made a short stop in Rostov, where Yeryomenko commanded the North-Caucasian Military District. He decided to give the guest one of his swords.

"Which one should I give?" he asked me, his magnificent collection spread on the table.

"I believe the one which is easiest to part with."

"That's not a present," Yeryomenko said discontentedly. "On the contrary, you must give what it is difficult to part with. Then it'll be a real memory. So I'll give him my best battle-tested sword."

Colonel (Ret.) Vladimir Shipkov, former adjutant to Marshal Ivan Bagramyan:

I happened to visit many places in the Soviet Union in the line of the Marshal's military service, social work and his work as a deputy to various Soviets. And everywhere people received him as kin. And indeed, Ivan Bagramyan was born and went to school in Azerbaijan. In Georgia he finished a school for ensigns to receive the first officer's grade. Then Armenia, the country of his ancestors, in whose mountain gorges the future Marshal fought the Turks. When the Great Patriotic War broke out, Bagramyan served in the Ukraine. On Byelorussian territory he took part in operation *Bagration*. In the Baltic Region the celebrated General commanded the 1st Baltic Front etc.

Ivan Bagramyan was a very obliging person, always good as his word.

Nikolai AIVAZYAN

TIME TO ACT

Some time ago different month's campaigns were popular in our artillery battalion, "A month's campaign for the parking ground improvement," "A month's campaign for fighting discipline violations," to name but a few. But they were just paper-tigers.

Now we decided: enough vague reports. After our commander okayed our proposal, we organised a sports corner. Everybody contributed.

There are now fewer empty speeches at Komsomol meetings about strengthening military discipline. Not that the issue doesn't concern us, but because we deal with it not only at meetings but in our everyday life. We believe that a Komsomol member must set an example first and be responsible for those beside him. It is his duty to give a helping hand to a soldier boy keeping him from taking rash actions and encouraging him when he is in trouble. Komsomol activists Sergeant Yermolenko, and Privates Ishchenko and Inogamov set the fashion.

However, I must admit straightforwardly that we still have problems. What is to be done to enhance the influence of the Komsomol organisation on the combat training and political education? How are we to better organise our leisure? A lot of problems. But the force of inertia is still strong. Every now and then somebody suggests getting rid of all problems once and for all through a stunning slogan or some other initiative. Sceptical smiles cross the Komsomol members' faces at hearing such declarations. We are past pompous initiatives. Ours is a time of action.

Guards Praporshchik
Aleksandr VOLKOVSKY,
delegate to the 20th
Komsomol Congress

CONTEMPORARY nuclear-powered submarines are major manoeuvrable carriers of nuclear missile weapons. High submerged speeds and great depths hamper their detection and localisation by conventional shipborne facilities. Whereas at sea the ship's sonar can pinpoint a target at a distance of up to 20 km, in coastal waters the range greatly diminishes due to reverberation and multiple reflection of the signal from the water surface and sea bed. And ship sonars are bulky, sophisticated and costly systems.

These and other reasons explain why the military departments of the USA, Britain, Federal Germany, Japan and Canada attach much importance to the development and improvement of anti-submarine aviation. Foreign experts maintain that ASW planes and helicopters are capable of monitoring vast areas of the sea within a short

channels its receiver can control at a time. A plane is reported to simultaneously control 16 and a helicopter 4 sonars. The Anglo-Italian helicopter EH-101 to be commissioned in the late 1980s will be able to control 25 sonars.

To search for and localise submerged submarines, use is also made of magnetometers which register magnetic anomalies produced by the submarine's ferromagnetic mass. In some NATO countries the magnetometer, comprising a detector and several sensors, is housed in a special pod made of non-magnetic materials. On planes, the pod is installed on a long beam behind the tail unit. In helicopters the pod is secured on the fuselage bottom. When searching for a submarine, it is lowered down to a height of 30 to 50 m above the water surface, the helicopter itself flying at an altitude of about 100 m.

Aircraft Versus Submarines

period of time, of detecting a submarine before it spots them and destroying the target at a great distance.

Special equipment installed on anti-submarine shore- and carrier-based planes can detect a submarine by analysing various physical fields such as magnetic, acoustic and thermal.

According to foreign experts, sonar equipment will long remain the major means for detecting and localising submarines over vast areas. The sub detection procedure is rather simple. An aeroplane or helicopter drops a bathythermographic buoy in the area where the submarine is expected. The buoy begins to automatically transmit sonar information in the VHF band. The operator on board the aircraft determines the depth to which the sonobuoy should be dipped and the time during which it should operate. Then the sensors are placed in the listening mode. To determine the target bearing relative to the buoy, the output signals of the hydrophones are compared with the base bearing transmitted by the buoy magnetic compass. Such a device can continuously operate for 9 hours.

The number of buoys simultaneously set by the aircraft depends on the number of VHF

From magnetometer sensors the signals are transmitted to aircraft computers which process and classify them to issue relevant weapon employment commands.

Foreign experts also give due consideration to the fact that thermal contrasts, produced between the submarine wake and the usual sea background during submarine movement, can be registered by infra-red equipment.

However, the reliability of the infra-red method of detection is dependent upon sea and weather conditions. Therefore several models of infra-red imaging systems developed abroad are regarded by military experts as auxiliary means supplementing sonar and radar equipment.

Some projects exist abroad for using airships, in addition to planes and helicopters, for submarine detection. Their primary advantages are low noise and vibration levels, and an ability to hover above the prescribed point for a long time. Besides, they can carry large-sized radar stations.

As for the weapons in service with the NATO armed forces, they include mines, multi-mode acoustic homing heads and directed-energy explosive charges.

Engineer Yuri BOIKO

The materials for the SMR Summaries are drawn from the OGONYOK, SOVETSKY VOIN and ZNAMENOSETS magazines, the KOMSOMOLSKAYA PRAVDA newspaper and its SOBESEDNIK supplement and the KRASNAYA ZVEZDA armed forces newspaper.



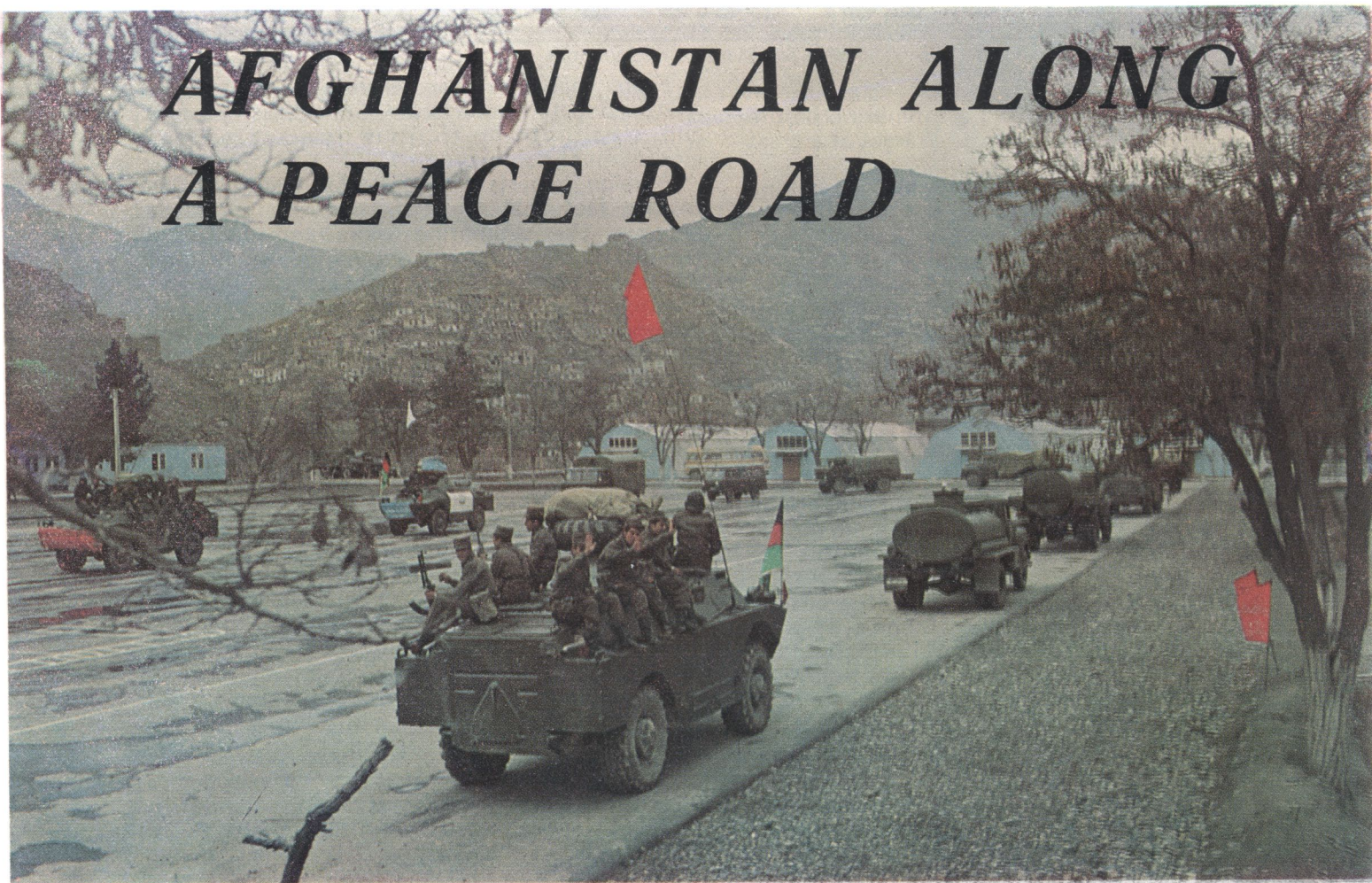
A short rally. Last minute instructions, parting wishes and off they go.

A few dozen various-purpose vehicles make up the column of the Republic of Afghanistan government propaganda detachment. There are fuel-filled tanks, trucks with foodstuffs and essentials for the remote villages, loudspeaker vehicles, guard subunit APCs (not all the roads are safe yet).

There were no incidents during the journey. The effectiveness of the national reconciliation policy is manifest. A palpable contribution is made by the Republic's servicemen taking part in the work of these government detachments, often at the risk of their lives.

Story and photos
by Mikhail SIDELNIKOV

AFGHANISTAN ALONG A PEACE ROAD





Photos:

- At the Republic's banner
- Detachment setting off
- Old and young alike attended the meeteng
- Amateur art concert
- At the doctor's
- Giving out goods and foodstuffs
- Leaflets are in demand too



Today any reasonable person understands that the continuing stockpiling of mass destruction weapons has long become senseless. The new

political thinking, advanced by the Soviet leadership and winning ever broader support the world over, opens the way to breaking the

vicious "actioncounteraction" circle in the nuclear sphere. The nuclear jinni must be forced back into its bottle, once and for all.

Who Let the Jinni Out?

ALREADY during the Second World War, the US politicians and the military thought that nuclear weapons could be a trump card in fulfilling their military and political tasks for years to come. Not all of them were so sure, though.

Secretary of War Henry Stimson later recalled that the US leaders understood the formidable responsibility they would assume for opening the door to such deadly weapons. President Roosevelt told Stimson about his doubts concerning possible catastrophic consequences.

But the desire to possess nuclear weapons outweighed caution. In 1944, Danish physicist Niels Bohr, whose theoretical work laid the basis for the bomb, called on Roosevelt and Churchill to invite the Soviet Union to nuclear cooperation.

"If we fail to reach agreement on control over the use of new active materials," he wrote, "any temporary superiority, however significant, would be less weighty than persisting threat to the security of humanity."

But Roosevelt and Churchill resolutely turned down the proposal and reaffirmed their agreement of September 1943 (Quebec, Canada) on keeping nuclear research top secret. The resolution of the

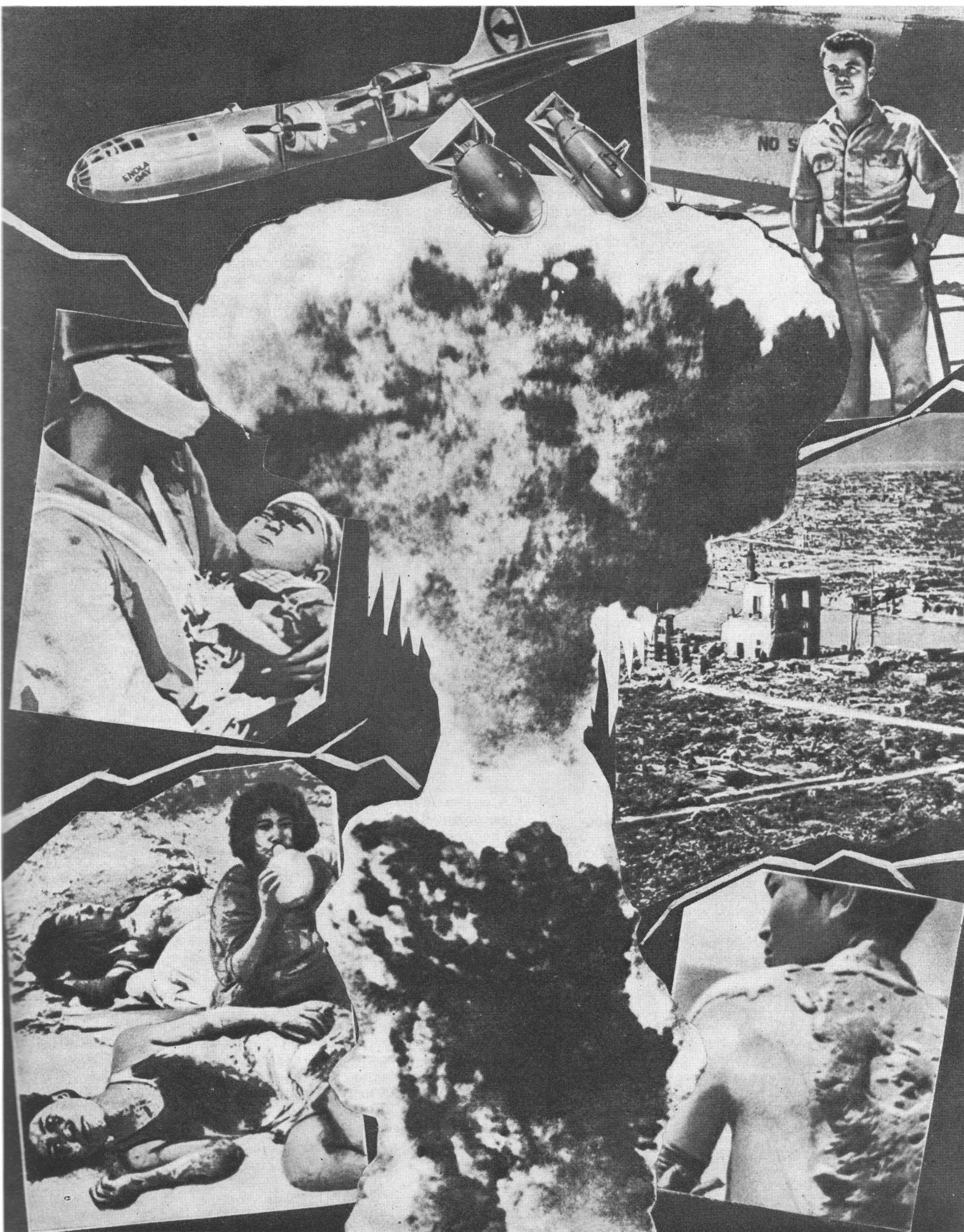
US Administration to speed the creation of the new weapon was not shattered when in November 1944 the Allies captured documents in Strasbourg which proved Germany's inability to put through Project Uranium in the near future. The US leaders tried to do everything in their power to prevent the Soviet Union from learning about German achievements in this sphere. Allied aviation for a long time spared a plant producing uranium metal in Oranienburg, Germany. But when the Red Army advanced dangerously close to it, more than 600 US bombers raised it to the ground.

After Harry Truman took over in the White House, he patronised the advocates of the hard line with regard to the Soviet Union. For him, the bomb was above all a "stick against those Russian guys" and he was eager to brandish it.

THE possibility soon presented itself at the Potsdam Conference of the Big Three, convened in the summer of 1945 to discuss the future of the world. Robert Oppenheimer, research director of the Manhattan Project, recalled: "We were harshly pressurised, forced to conclude our work before the Potsdam Conference."

It is well known that Truman tried to blackmail Stalin with a

There is a tale about a jinni which, when set free, did a lot of evil. Of the host of acute problems facing humanity, the problem of survival is the most important. Huge nuclear stockpiles are our jinni that hovers over the Earth, threatening catastrophe. It lingers in silos housing intercontinental ballistic missiles, in the seas patrolled by nuclear missile submarines, and in the air where nuclear-armed strategic bombers zoom. Was the jinni set free by chance?



new bomb "of exceptional destructive power". However, this did not produce any visible impression on the Soviet leader, which only fostered the resolution of the US President to use the bomb as soon as possible. After the talks with Stalin on July 24, Truman sanctioned the nuclear bombings of Hiroshima and Nagasaki. On August 6 and 9, hundreds of thousands of people in those Japanese cities perished in the nuclear inferno. The evil jinni was set free.

Immediately after the end of the war, the Soviet Government suggested banning the production and use of nuclear weapons, and eliminating its stockpiles. Atomic power should be used for peaceful purposes only, we argued.

On Soviet initiative, the issue of nuclear energy was addressed by a meeting of foreign ministers of the Soviet Union, the USA and Britain in December 1945 in Moscow. In June 1946, the Soviet draft of a relevant international convention was tabled at the UN. It provided all the necessary conditions for the prohibition of nuclear weapons under international control.

BUT THE USA did not want to give up its nuclear monopoly, regarding it as the main lever in changing the world to its own liking. General Maxwell Taylor, the US Army Chief of Staff, later said about the US policy that the terrible destructive power of atomic bombs bred a belief that the US Air Force possesses the decisive weapon which would enable the USA to police the world and force a Pax Americana (peace American style — *Author.*) on it.

Simultaneously with the creation of the atomic bomb, the USA started preparing scenarios of attacks on the Soviet Union. Two weeks after Japan capitulated (September 2, 1945), the Joint Chiefs of Staff approved Directive 1496/2, "Basis for the Formulation of a Military Policy," where the Soviet Union was named the enemy. It claimed that the idea of the inadmissibility of US own aggressive actions was fallacious

and dangerous, and pointed to a possibility of delivering the first strike at the Soviet Union.

In November 1945, the Joint Intelligence Committee pinpointed 20 Soviet cities as targets of a nuclear attack. Indicatively, the attack was to be launched if the production and scientific advances of the enemy give grounds to believe that it is capable of an eventual attack at the USA or of defence (sic — *Author.*) against US offensive.

By 1948, the USA elaborated a dozen scenarios for nuclear attacks on the Soviet Union. The August 1948 Directive 20/1 of the National Security Council, "US Objectives with Respect to Russia", said that the conditions of peace must be tough and openly humiliating for this communist regime. They can approximate the conditions of the 1918 Brest-Litovsk peace. (Soviet Russia was forced to conclude a treaty with the German bloc on March 3, 1918. In accordance with its provisions, Russia was to cede vast territories, pledged to pay huge war indemnities and demobilise the army and navy. The treaty was abrogated by the Soviet Government on November 13, 1918 after the November Revolution triumphed in Germany). It further said that US operations cannot be regarded successful if after their conclusion the Soviet political system would remain intact.

The USA was hastily building up its nuclear potential. In 1948, 30 US B-29 bombers with 50 nuclear bombs were deployed in Western Europe, a suitable bridgehead for aggression against the Soviet Union.

The November 1948 Directive 20/4 of the National Security Council said that a careful consideration of various factors shows that the Soviet Union is not planning any military actions designed to engage the USA in a conflict. The US military command noted that the Soviet Union does not present an immediate danger.

AT THAT time the USA had a monopoly on nuclear weapons, and hoped that this

would allow it to blackmail other nations, interfere in their internal affairs, and subjugate them to the US will for years to come.

Of course, the Soviet Government did not know the details of these plans, but openly hostile actions and statements of the US leaders left no doubt of their aggressive aspirations. Understandably, the Soviet Union did everything to create its own nuclear weapons for defence.

In September 1949, Washington was shocked to learn about the testing of a Soviet nuclear bomb. The US monopoly on nuclear weapons was broken. The USA had to revise its plans. Some politicians and scientists said that the stake on nuclear weapons was dangerous and had no future, and called for a dialogue with the Soviet Union. But their voice was not heeded.

In January 1950, President Truman announced his decision to start work on the hydrogen bomb. The Soviet Union had no other option but to create such a bomb, as well. This launched the race for nuclear weapons and delivery vehicles. Each round in this race was initiated by the USA, which has been striving for superiority at all costs.

WHAT is the situation now? Today any reasonable person understands that the continuing stockpiling of mass destructive weapons has long become senseless. Nuclear weapons, accumulated in the world, would suffice to kill life on Earth many times over. Meanwhile, once would be enough.

The new political thinking, advanced by the Soviet leadership and winning ever broader support the world over, opens the way to breaking the vicious "action-counteraction" circle in the nuclear sphere. The Soviet-US Treaty on the abolition of intermediate and shorter-range missiles is the first step towards this noble aim.

The nuclear jinni must be forced back into its bottle, once and for all.

Sergei MONIN,
Cand. Sc. (History)

MARSHAL TUKHACHEVSKY

ON THE SIDE OF THE PEOPLE

Mikhail Tukhachevsky was born in the small estate of his father, a nobleman by birth, near the old Russian city of Smolensk. In his childhood he liked to play outdoor games and painted pictures. Throughout his whole life he practised music and painting in his leisure hours. Most of the books he read when he was a little boy were about battles and brave commanding officers.

His youthful ambition was to become a professional officer himself and he did everything he could to realise his dream. In 1914, he graduated from the Aleksandr Military School in Moscow with distinction. He took a commission for the Guards Semyonov Regiment, the oldest Russian Army unit, and arrived at the regiment, only to see action on a WWI battlefield. He was very much admired in his company. He took part in many bayonet assaults and scouting raids. His valour earned him six orders. In February 1915 Tukhachevsky was taken prisoner. He escaped from a German POW camp after five unsuccessful attempts.

He returned home to witness the stormy days of October 1917. He did not hesitate an hour to take his choice. When in January 1918 he heard about the government decree to form the Red Army, he at once came to Moscow. With a good reference from Nikolai Kulyabko, a Bolshevik who had been a companion in his youth, he started work in the military department of the All-Russia Central Executive Committee and joined the Bolshevik Party. He



Marshal of the Soviet Union Mikhail Tukhachevsky (1893 – 1937) was a talented military leader. Many of his theoretical developments are even today valid, continuing to stimulate military thought both in this country and abroad.

was soon promoted to military commissar for defence of the Moscow Region, but his intention was to go to the lines. Before long he saw action again.

ON THE BATTLEFIELDS

June 1918. Tukhachevsky was appointed commander of the 1st Army of the Eastern Front. Except for the staff, the army had not yet been raised. Tukhachevsky took urgent steps, forming a number of Red Guard detachments and scattered units into regiments and divisions, making arrangements for weapon

drills and recruiting commanding officers from among the re-called Russian Army ex-officers. He urged the central and local Party bodies to send him more Communists, in order to instil a spirit of conviction, discipline and morale into the regiments.

The army gained strength. That September it won a first battle, crushing a large group of Admiral Kolchak's forces and liberating Simbirsk (now Ulyanovsk). Lenin, who had just recovered from wounds, sent the army's Revolutionary Military Council a telegram: "The capture of Simbirsk, my home town, is a wonderful tonic, the best treatment for my wounds... Congratulations to the Red Army men on their victory."

Tukhachevsky became famous as a military leader almost overnight. The operations he conducted in the Urals and in Siberia in 1918 and 1919 were remarkable for boldness, shock effect, concentration and speedy manoeuvre. Even the occasional failures could not make him lose faith in himself and the abilities of his troops. His military talent developed quickly from battle to battle.

In January 1920, General Denikin's White Guard army had been driven by the Red Army from Moscow into the south, but could concentrate forces for a counter-attack outside Rostov. The Soviet Supreme Command had come to the conclusion that it was at this point that the main thrust of the Caucasian Front should be directed. Tukhachevsky, who had just taken command of the front, thought otherwise. It took him a few days to concentrate a number of shock groupings on the opposite flank to take in the

rear of the Denikin army. After two weeks of fierce fighting, the army was smashed.

That summer, Tukhachevsky, in command of the Western Front warring against bourgeois Poland, used an ingenious method of breaking through defence lines without a frontal blow. He concentrated his main forces on the northern flank of the hostile grouping and, in a dashing offensive, crushed the defence lines of the enemy. The strategic front collapsed. The Polish-occupied territory of Soviet Byelorussia was liberated...

Two other events associated with the name of Tukhachevsky are the suppression of the Kronstadt mutiny in March 1921 and the suppression of the counter-revolutionary uprising in the Tambov region that summer. Both operations were quick and effective because of Tukhachevsky having analysed the military and political situation in great detail and using a variety of tactical methods. His contribution to the defeat of the counter-revolution earned him an Order of the Red Banner and an Honorary Revolutionary Weapon as trophy.

ARMY BUILDER AND THINKER

A testimonial on Mikhail Tukhachevsky in 1921 says: "Highly initiative, resourceful, broad-minded. Persevering. Can connect everyday work with intense self-education and attainment of more scientific knowledge. Sincerely dedicated to the Revolution and not inclined to ostentation (detests servility etc.). Straightforward, candid and credulous in his relationships with Red Army men and officers... Impeccable in reputation as Party member and morals. Capable of conducting large-scale organisational work at the Republic's high military posts."

After the Civil War, Tukhachevsky held many high posts, including chief of a military academy, chief of staff of the

Red Army, deputy people's commissar for military and naval affairs and chairman of the USSR Revolutionary Military Council. In his wide-ranging practical and theoretical activities, he invariably showed profound thinking and a remarkable insight into potential military developments. He used to say that the principal weapons of modern armies would be tanks, aircraft, missiles and automatic rifles. He supported ardently everything that was really novel and promising. It was Tukhachevsky who called for a jet-engine research institute. It was established in 1933, the world's first. He believed that the ideas expounded by Eduard Tsiolkovsky (now the world-renowned forefather of space travel) would gain wide recognition.

Lenin, in 1920, acquired for his private library Tukhachevsky's book "National and Class Strategy." Tukhachevsky authored many theoretical works on development of the armed forces, the strategy and pattern of future warfare, and the country's preparations against aggression. He wrote in 1926: "...It is most likely that we will have to encounter a grave large-scale war and million-strong armies armed with the most advanced weapons. There will no doubt be prolonged, stubborn, savage fighting. A war of this scale will require the militarisation of the country's whole economy, and we must make preparations beforehand." His predication came true fifteen years later, in June 1941.

Mikhail Tukhachevsky contributed to the development of the theory of depth operations. The essence of the theory is that tanks and motorised troops supported by artillery and aviation must be used in concentration to break through and develop success at a fast rate in operative depth. A great achievement of Soviet military science, the theory served as the basis of many an offensive of the Soviet Army during the Great Patriotic War.

CITIZEN AND COMMUNIST

Mikhail Tukhachevsky was a man of principle. He was exceedingly brave and honest. In June 1918, Muravyov, the Eastern Front Commander who betrayed the Soviet Government, attempted to persuade Tukhachevsky to do the same. Tukhachevsky, with no regard for the consequences, said bluntly: "We have nothing any more to argue about. You are a traitor!"

It was sheer luck that Tukhachevsky was not shot. Tukhachevsky could always speak out frankly on any matter and in any circumstances. He could defend his own views and was not afraid to challenge authorities and generally accepted views. The prospect of damaging consequences could never prevent him from speaking out for he valued the interests of the cause higher than anything else.

Tukhachevsky's amicability, naturalness and simplicity appealed to all. He was very much loved by his companions and friends. His friends included the great military leader Mikhail Frunze and outstanding Party figures such as Grigory Ordzhonikidze and Valerian Kuibyshev and composer Dmitry Shostakovich.

In 1933 Tukhachevsky won an Order of Lenin and two years later became Marshal of the Soviet Union (there were five Soviet marshals at that time). In 1936 he was appointed the first deputy people's commissar for defence and chief of the Department of Combat Training. The youngest of the Soviet marshals, he was full of energy and creative plans when in May 1937 tragedy struck. He was arrested on a falsified charge and executed shortly after. His good name was restored at the 20th Congress of the CPSU in 1956. Marshal Mikhail Tukhachevsky has remained in the memory of the Soviet people as a true son of his country whose life can serve as an example of courage and dedication to great ideals.

Colonel Nikolai KUROV

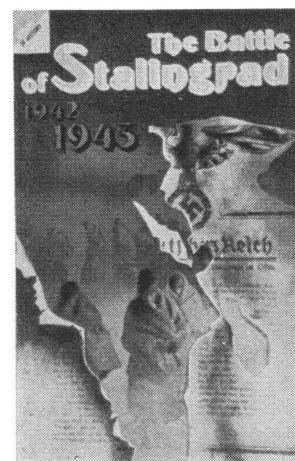
...lasted the Battle of Stalingrad (July 17, 1942 — February 2, 1943), the greatest battle in World War II. At the beginning of his story about it, Soviet scientist Yuri Plotnikov briefly dwells on the pre-history of the fascist aggression. Why did the nazi come to power in Germany in 1933? Who is to blame for unleashing World War II? Why did the Hitler blitzkrieg strategy in war against the USSR end in failure? The author gives well-reasoned answers to these and some others questions.

fact that the Russian armies are killing more Axis personnel and destroying more Axis materiel than all the other twenty-five United Nations put together." The President was right. The majority of the nazi forces were held on the Eastern Front: in the summer of 1942, some 80 percent of the Wehrmacht land forces were fighting here.

The summer campaign started unfavourably for the Soviet troops. In May 1942 they suffered heavy losses in manpower and materiel during the battle at Kharkov.

ted, defeated and pulled back.

On February 2, 1943 the Battle of Stalingrad was over. Over 91,000 enemy officers and men headed by Field Marshal Paulus, were taken prisoner. In the course of the battle the fascist bloc lost 25 percent of its forces on



200 DAYS AND NIGHTS...

After a heavy defeat at Moscow in winter 1941-1942, the nazi leaders decided to deliver a blow on the southern sector of the Soviet-German front, capture the Caucasus and reach the Volga near Stalingrad. The nazis did not fear for their rear in the West, for the Soviet Western Allies were not going to open a second front in Europe despite their obligation. Though, writes Yuri Plotnikov, in August 1942 the Allies did land one (!) Canadian division near Dieppe, northern France. It was destroyed within hours.

When the Battle of Stalingrad began, US President Franklin Roosevelt said: "In the matter of grand strategy I find it difficult this spring and summer to get away from the simple

The enemy's major forces rushed for the Caucasus. The Germans did not expect to meet serious resistance in the Stalingrad sector, which was initially considered secondary, but turned out to be the main due to the staunchness displayed by Soviet soldiers. Practically all the reinforcements moving to the Eastern Front at the rate of about 250,000 men a month were directed to Stalingrad where they suffered defeat in unparalled and severe fighting.

In mid-November the nazi's last attempt to capture the city flopped. By that time the Soviet Command concentrated mighty forces on the enemy flanks. On November 19 a Soviet counter-offensive was launched and in a few days a 30,000 enemy grouping found itself in encirclement. In December the panzer divisions under Field Marshal Manstein attempted a breakthrough but were arrested,

the Eastern Front, i. e. nearly 1,500,000 men.

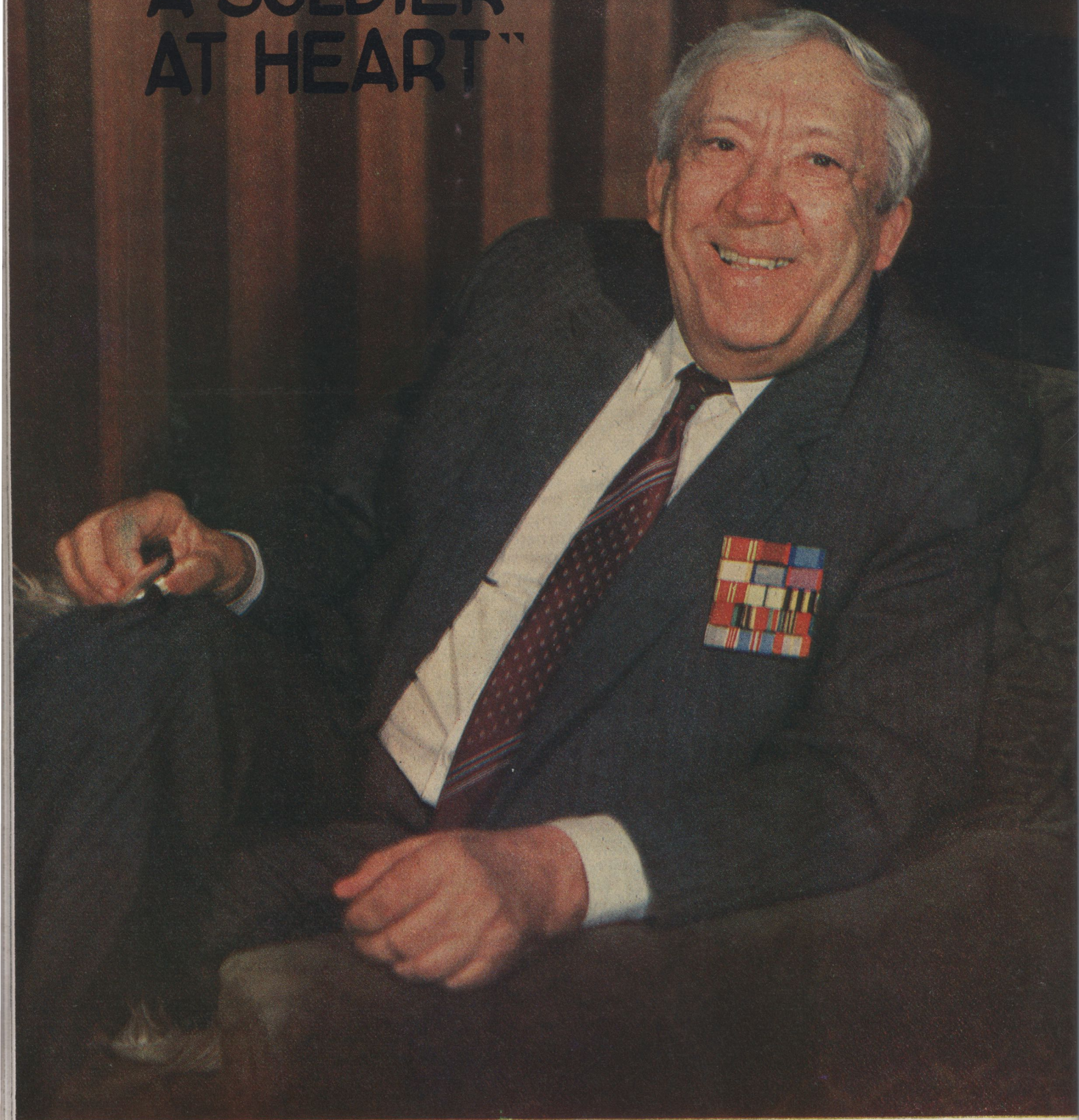
Discord followed in the fascist bloc. Scared by the rout of the Italian 8th Army at Stalingrad, which lost 90,000 killed and 43,000 wounded and frostbitten, fascist dictator Mussolini even suggested that Hitler conclude a temporary truce with the Soviet Union. Finland and Hungary began to consider withdrawing from the war. Japan renounced its plans to attack the USSR. Turkey, which had aggressive anti-Soviet intentions, displayed a tendency to strengthen contacts with the countries of the anti-Hitler coalition.

The book contains the chronicle of the battle, schemes, photos and tables. The author cites a great number of documents by Soviet, British, American and German military political figures and historians.

Nikolai LARICHEV

Yu. Plotnikov. "The Battle of Stalingrad. 1942-1943." Novosti Press Agency Publishing House, Moscow, 1987 (In English).

**"I AM
A SOLDIER
AT HEART"**



Circus lovers remember him as a brilliant clown. Comedy fans rank him among the best comic actors. Those who saw the films "They Fought for the Motherland", "Twenty Days Without War" and "When the Trees Were Big", think he has great dramatic talent.

Yuri Nikulin, People's Artiste of the USSR and director of the Moscow Circus on Tsvetnoi Boulevard, is a talented man, famous in this country and abroad.

But few know that Sergeant (Ret.) Yuri Nikulin, a veteran of the Great Patriotic War, has many government awards, including the medal "For Courage". He was interviewed by our non-staff correspondent Yakov Firsov.

FIRSOV: You were called up nearly 50 years ago. Time erases many things from our memory, yet you probably remember your first days in the army.

NIKULIN: Yes, time is a great cleanser. But you usually forget things of little importance anyway. And my service in the army was not a second-rate thing for me. I spent nearly seven years in the army; it was a great school of life, getting to know people and learning to cooperate with them. This has greatly helped me in my "civilian" life and at work.

I will never forget my first days in the army, especially the first PT exercises. A mother's darling, I had to go outdoors in winter without a tunic, run 1.5 kilometres and then wash with ice-cold water right there, in the open.

I was sure I would come down with pneumonia. But I did not. On the contrary, never before was I so healthy and active. This training later helped me overcome many difficulties and privations during the war.

FIRSOV: For most of those who had served in the army, the past war is history. But for you, like for most war veterans, it is a part of life, isn't it?

NIKULIN: Yes, and the most difficult part. The war called for unmatched moral and physical efforts.

Fascists used to drop leaflets calling on us to surrender. They wrote that all Leningraders were doomed to a hungry death and the only way out for us was to surrender. But we found the strength to fight. We were ready to fight till the end, to avenge the enemy for the suffering of Soviet people. We were supported by the feeling of comradeship and by constant care of commanders and soldiers for each other.

I saw Leningrad during the blockade. Silent street cars, houses in ice and snow, deep snow in the streets with narrow passages. And people moving along these passages, slowly, saving strength. Emaciated, they seemed shadows of people.

Many did not survive the blockade. In January 1942, several thousand died daily, children, women

and old people. But the fascists did not manage to break their will. The Leningraders held out.

FIRSOV: With all the war horrors, suffering and privations, jokes survived, didn't they?

NIKULIN: They not only survived, they helped people survive, added strength and brightened our life.

Once our section was deployed to dig trenches in the neighbouring unit. It was dark and raining. Flares were lighting the dark night. At last we reached our destination, tired beyond words. A tall major came up: "Did you bring along the instruments?" (He meant spades and pick-axes). "Yes", I answered and showed him a spoon. Everybody laughed and our moods improved immediately.

Another example. Formal drills were not my virtue. When I marched everybody could not help laughing. The greatcoat looked like a sack on my awkward figure, boots dangled around my dry ankles. I was embarrassed but laughed with everybody. Soon I learned to look like a soldier.

FIRSOV: Please, a few words about your cinema career.

NIKULIN: For a long time, film directors avoided me. Director Sergei Yutkevich once said that there was something in me, but it was not for films. I would have remained in the shadows if not for the film "The Girl with a Guitar". It launched my film career.

I was deeply influenced by the film "They Fought for the Motherland". When director Sergei Bondarchuk offered me the role of soldier Nekrasov, I reread the novel by Mikhail Sholokhov. I thought for a long time whether to take the role. "We both fought in the war," Bondarchuk told me. "Soon we will mark the 30th anniversary of the end of the war. The film will be timed for it. Do you still have doubts? Taking part in the film is our duty as soldiers."

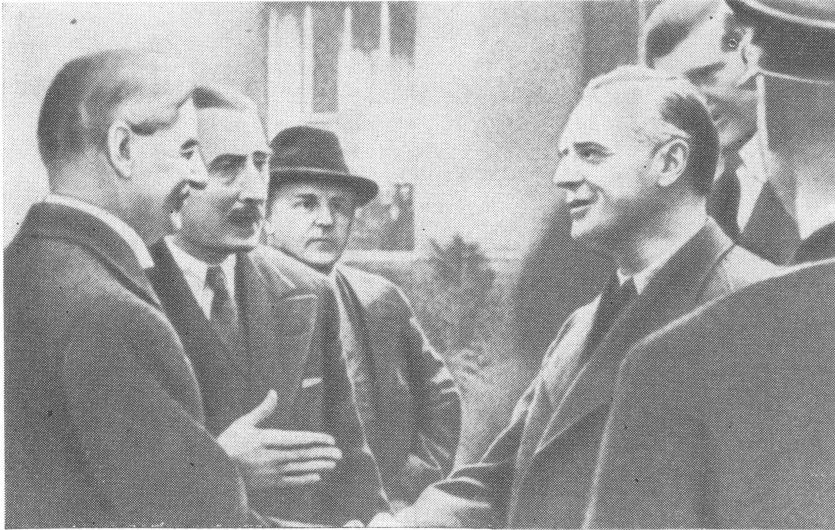
Two days later I came to the studio. The shooting of the film was like reliving my war years. I remembered the trenches, dug-outs and the bombings. My character, soldier Nekrasov, made me understand that I am still a soldier at heart.

FIRSOV: Thank you for the interview. What would you like to wish our readers?

NIKULIN: Each person plays many roles in life, whether aware of this or not. I think that the most honourable role that all must play is the role of the defender of their country. And I would like to wish your readers to master their profession well, to learn to defend and love their Motherland.

Photo by Valery YEVTUSHENKO

The Betrayal



On September 22, 1938, British Prime Minister Chamberlain arrived in Germany. He told the nazi leaders about Britain's and France's agreement to the dismembering of Czechoslovakia

March 1939. The German troops are entering Prague — that was the finale of the Munich sellout

The Munich agreement signed by the heads of state of Great Britain and France and nazi Germany and fascist Italy in September 1938 paved the way to the Second World War (1939 — 1945). In political vernacular, Munich has become a symbol of betrayal of the interests of nations and a symbol of conspiracy by imperialist reactionary forces.



“MY FIRM resolution is to annihilate Czechoslovakia by making a military attack in the nearest future,” was how Hitler formulated the aim of the Fall Grün he signed on May 30, 1938. The nazi leaders prepared their next act of aggression by playing, as they had before, on the appeasement policy of Western powers which hoped that the German nazis would move eastwards toward the borders of the Soviet Union.

On April 24, 1938, the nazi

party in the Sudetenland, whose population included German-speaking people, was ordered by Hitler to advance a claim for autonomy. This in effect meant that Czechoslovakia was to give up its sovereignty over the region.

The British and French prime ministers and foreign ministers met in London that month to suggest that the Czechoslovak government should give way to the demands. The nazi leaders seemed certain that the Western powers would put no obstacle

in the path of their plans; and in fact had good reason to be so. The British Deputy Prime Minister Lord Halifax, meeting Hitler on November 19, 1937, reassured him that the British ruling circles could comprehend “Germany’s legitimate territorial claims to Czechoslovakia, Austria and Poland.” Lord Halifax called nazi Germany “a bastion against Bolshevism.”

What alarmed the nazis was the Soviet Union’s position. The Soviet Union had been persis-

tently urging collective security to block aggression in Europe. With a Soviet-Czech 1935 treaty of mutual defence in case of aggression, the Soviet Union had continually confirmed its willingness to help Czechoslovakia. Immediately after the Anschluss of Austria on March 15, 1938, the Soviet Union made an official announcement that it was ready to fulfil its obligations under the terms of the Soviet-Czech treaty. On May 25 it re-affirmed its willingness, and similar statements were made on June 25 and August 22.

This prompted the policy-makers in London and Paris to come to Hitler's support under the guise of "mediation". In August 1938, a representative of the British government arrived in Prague and worked out recommendations, according

to which Czechoslovakia was to hand Germany part of the Sudeten region. This Western stance made the nazis more impudent. On September 13, Hitler inspired a putsch of Sudeten Germans and openly threatened Czechoslovakia with armed reprisals.

British Prime Minister Chamberlain met Hitler on September 15, 1938 and agreed to his claim to allow the Third Reich to take over that part of the Czech territory whose population was more than 50 percent citizens of German origin. The British Prime Minister assured the Fuehrer that he would make the Czechoslovak government accept the claims.

Indeed, two days after the talks, the British cabinet approved what it hypocritically called "the principle of self-determina-

tion" for the Sudeten region. On September 18, the French Prime Minister Edouard Daladier and his Foreign Minister Georges Bonnet flew to London. The outcome was an Anglo-French ultimatum delivered to... the leaders of friendly Czechoslovakia! A sovereign state was dictated to satisfy Germany's claims "in the interests of European peace"!

The people of Czechoslovakia declared overwhelmingly against the dismembering of the country. "What London advises us to give is in fact as great a territory as that Czechoslovakia might have been forced to yield if it had lost war," said the Czechoslovakian Communist Party's General Secretary Klement Gotvald speaking on September 19 before a standing committee of the Czechoslovak Republic's National Assembly. "We know," he went on, "that the Soviet Union will not hesitate to fulfil the existing treaty obligations. If we have to defend ourselves, we shall not be alone." The bourgeois government of Czechoslovakia, which had regarded the Soviet-Czechoslovak Treaty as an ad hoc political manoeuvre, started a tactics of manoeuvring. On September 19, President Edvard Benes said that "surrender was ruled out," and asked the Soviet Union to explain its position regarding aid in more detail.

The Soviet Government immediately confirmed its willingness to render direct military aid to Czechoslovakia. The reply was delivered to President Benes by



The population of Prague meeting the entering nazi troops in indignation. March 1939

September 29, 1938. German Foreign Minister Ribbentrop showing the French Foreign Minister Daladier where to sign the Munich agreement.



telephone the same day. On September 21, the Soviet Ambassador in Prague called upon the President and told him verbatim that the Soviet position had not changed. That day Soviet Foreign Minister Maksim Litvinov at a plenum of the League of Nations officially confirmed the Soviet Union's willingness to meet its obligations on Czechoslovakia and urged a conference of the European great powers and other countries concerned "to work out a collective demarche."

Nevertheless, President Benes that day announced that Czechoslovakia accepted the Anglo-French demands. The news evoked a wave of massive demonstrations and strikes throughout the country. Meanwhile, the nazis wanted more. On September 22, Chamberlain met Hitler again; Hitler demanded that the whole Sudeten region should be handed to Germany and some of the Czechoslovak territory to Hungary and Poland. The government of Czechoslovakia, pressed by the people, introduced universal military conscription, but in fact feigned that it was intended to defend the republic.

As conscription in Czechoslovakia went on, the Soviet Government reiterated its willingness to give immediate help if the Czech government asked it to do so. The Czech government did not. The ruling circles of Czechoslovakia proved incapable of overcoming their class self-interests for the sake of national interests. Fear of their own people made the Czechoslovak bourgeoisie grave-diggers for their own country.

On September 29-30, Neville Chamberlain, Edouard Daladier, Adolf Hitler and Benito Mussolini met in Munich. No representatives of Czechoslovakia had been invited. The leaders of the four powers struck a deal, under which the Sudetenland and some regions of Czechoslovakia bordering on Austria were to be handed to Germany until October 1-10, 1938. In addition, Czechoslovakia was to meet the territorial claims of Hungary and Poland. The leaders participating "guaranteed" the new borders of Czechoslovakia against unprovoked aggression. On September 30, the government of Czechoslo-

vakia accepted the terms of the Munich agreement. Thus the Third Reich annexed approximately 20 percent of Czechoslovak territory, where a quarter of the population lived and nearly half of the heavy industry was located, without a single gun shot.

Now, Czechoslovakia could offer resistance. In September 1938 its army numbered 2,000,000 men and officers, 45 divisions, 1,582 planes and 469 tanks. Both the army and the people were in high morale. The German army at the time had 47 divisions, 2,500 planes and 720 tanks. Its total strength was 2,200,000 men and officers. The well-fortified defence lines, the well trained and equipped armed forces and, above all, the Soviet Union's willingness to come to help were there for Czechoslovakia to block aggression effectively. A total of 30 infantry divisions and 10 cavalry divisions and a few tank and air force formations of the Red Army were fit and ready to give immediate and effective aid.

The infamous deal at Munich was supported by the US government. The British and French "appeasement-mongers" described the Munich deal as "a step in the direction of peace". The truth was the reverse. In October 1938, German Foreign Minister Ribbentrop told Italian Foreign Minister Ciano: "The Czechoslovak crisis demonstrated our strength. We enjoy the advantage of initiative and we are the masters of the situation. We cannot be attacked. From the military point of view, the situation is excellent: we can make war with the great democracies (i. e. Britain and France — Auth.) as early as September 1939."

Pravda on October 4, 1938 wrote: "Czechoslovakia, which trusted the magnanimity of the government circles of Britain and France, has fallen prey to the plunder of aggressors — Germany and its allies." The prediction came true: less than six months later, on March 15, 1939, the German troops, riding roughshod over the Anglo-French "guarantees," eliminated Czechoslovakia as a sovereign state.

The Munich deal encouraged further German aggression. The policy of the Western powers made it clear unambiguously to

the nazi leaders that there would be no collective security in Europe at all. Today the Western ruling circles try to whitewash the past, making the public believe that nazi Germany's attack on Poland and the Second World War was triggered by the Soviet-German non-aggression pact of August 23, 1939. But before that there had been the Anschluss of Austria, the Munich agreement, the nazi occupation of Czechoslovakia and the Klaipeda region of Lithuania, the British-German and French-German non-aggression pacts of 1938 and the mutilation of the Spanish Republic in the spring of 1939! The aim of that policy was to use the countries of Central and South-Eastern Europe to open the way for the nazis to crusade against the Soviet Union by conniving with the aggressive states, in the first place with Germany.

The Munich deal has gone down in history as a symbol of shame and betrayal. Half a century after there are some politicians who try to distort the notorious symbol. Thus, Eugene Rostow, the chairman of the "Committee on the Present Danger," in *The New-York Times* on January 5, 1988 came up with an article which clearly expressed the views of those forces which, as he said, regard the INF Treaty as a new Munich deal, as the beginning of the US retreat towards isolationism in the face of the covert threat of the mounting superiority of Moscow.

This is clearly an anti-Soviet attempt to distort a historic agreement on elimination of a whole class of nuclear missile weapons which marks a big step toward a nuclear-free world by comparing it with the infamous Munich deal. But times have changed. The new political outlook is gaining popularity throughout the world. The nations know that the Munich deal paved the way to war, whereas the US-Soviet agreement on elimination of some nuclear missile weapons is paving the way to world peace.

Colonel Aleksandr ORLOV,
Cand. Sc. (History)

Academician Goldansky: “ I Believe in Reason ”

The work for nuclear disarmament and against a nuclear war underlies the Soviet foreign policy, which has been advocating a nuclear test ban as a way towards this goal. Vladimir Khrustov, non-staff correspondent of Soviet Military Review, interviewed Academician Vitaly Goldansky, Lenin Prize Winner, Chairman of the Soviet Pugwash Committee, and Deputy Chairman of the Committee of Soviet Scientists in Defence of Peace, Against Nuclear Threat.

KHRUSTOV: *The Soviet Union called for banning nuclear tests at the very dawn of the nuclear era, didn't it?*

GOLDANSKY: Yes, and it had to work very hard to make possible the 1963 Moscow Treaty which banned nuclear tests in three media. Here are the facts.

May 10, 1955: The Soviet Union tabled a draft declaration in the UN subcommittee calling on all nuclear and thermonuclear states to stop nuclear tests.

May 10, 1957: The USSR Supreme Soviet sent the same call to the US Congress and the British Parliament.

March 31, 1958: The Soviet Union decided to stop all nuclear tests and called on all other nuclear states to follow suit. The USA and Britain refused to join the Soviet moratorium and in October we resumed nuclear testing.

November 3, 1958: The Soviet Union again stopped nuclear tests, but France continued its nuclear test programme and we resumed testing on August 31, 1961.

Yet the Soviet Union's consistent peace policy produced positive results: on August 5, 1963, the Soviet Union, the USA and Britain met in Moscow to sign the Treaty on Banning Nuclear Weapon Tests in the Atmosphere, in Outer Space and Under Water.

The treaty is a document spearheaded into the future, for it binds parties to stop all nuclear weapon tests for ever. Acting in line with the Treaty, the Soviet Union announced another moratorium on August 6, 1985 and prolonged it five times to a total 569 days. Regrettably, our call was not heeded by the West.

KHRUSTOV: *Some people in the West claim that this Soviet moratorium was useless and did not bring humanity any closer to nuclear disarmament. Is this so?*

In August this year, the world will mark the 25th anniversary of the Moscow Treaty on Banning Nuclear Weapon Tests in the Atmosphere, in Outer Space and Under Water, and three years since the proclamation of the unilateral Soviet moratorium on nuclear tests.

GOLDANSKY: I don't agree. The Soviet moratorium was a moment of truth in modern politics. It showed who sincerely wants to disarm and who pays lip service to the desire. The moratorium expanded the ranks of active fighters against nuclear weapons, especially in the developing countries. It laid bare the Western arguments that nuclear tests are indispensable.

KHRUSTOV: *What arguments?*

GOLDANSKY: Washington claimed that tests are needed to prove the "reliability" of nuclear stocks. But scientists (US included) refuted this argument by proving this can be done without tests. Military experts reminded Washington that three quarters of nuclear stocks are made up of warheads with a yield of over 150 kilotonnes, which is more than is allowed to test by the 1974 Treaty. They have not been tested for 14 years; yet no one in the USA doubts their reliability.

The next US argument was that the Soviet Union had outpaced it in nuclear testing. But according to the Swedish Institute for Defence, the USA conducted 50 percent more tests than the Soviet Union.

But the true reason behind the US unwillingness to join the moratorium was the Pentagon's comprehensive rearmament programme. The Pentagon planned to produce more than 17,000 nuclear charges in the years 1986-1989 and is speedily creating third-generation nuclear and space weapons. Understandably, it could not do without tests, they believe in the USA.

The version about the "impossibility" of effective verification of the moratorium fell through. The Soviet Union stated that it was ready for most strict triple control: by national means, together with the USA, and internationally, including on-site inspections. American seismologists assembled their equipment at the Soviet

testing range outside Semipalatinsk. Later Soviet scientists visited the Nevada range.

The scientists concluded that even national means were enough to detect a nuclear explosion of the smallest yield and differentiate it from an earthquake.

KHRUSTOV: *So the moratorium helped solve the problem of verification?*

GOLDANSKY: Yes. The creation of reliable regimes for mutual verification and control is a key task in the disarmament programme.

How can we prove that a nuclear-powered submarine has nuclear arms or a cruise missile is nuclear-tipped? How can we monitor the prohibition of the production of fissionable materials (Plutonium and Uranium-235), the initial components of nuclear weapons?

Vital questions are involved: Does a state fulfil its pledges? Can it be trusted? Is humanity guaranteed against a chance outbreak of a nuclear war?

Verification (which must be the strictest possible) relies on different means, above all monitoring and photographing from space. An object the size of a basketball can be detected from a distance of 3,000 kilometres.

Infra-red sensors and radars that can be mounted on Earth, special tracking stations and seismic detectors are very effective in verifying nuclear disarmament. In a word, we scientists will have much to do.

KHRUSTOV: *But scientists can be accused of creating nuclear weapons which brought humanity to the brink, can't they?*

GOLDANSKY: First, neither the atom nor the scientists who discovered it are to blame for humanity's ill fate. Everything depends on whether we use scientific advances for good or for bad. Second, most scientists who created the first atomic bomb pursued the noble aim of routing Hitler and his allies and averting any future wars.

After the first atomic bomb was created, scientists sounded the alarm, for they saw their responsibility to humanity.

During a meeting with major US media people, Mikhail Gorbachev said: "I think that we made a mistake when we did not listen to Einstein and his colleagues. They warned us that the world has got a power that calls for a new thinking. Their warning was received without due responsibility, and now we are reaping the fruit of irresponsible attitude to the opinion of scientists."

KHRUSTOV: *What are the scientists doing to safeguard peace?*

GOLDANSKY: The main organisation of scientists for peace is the Pugwash movement, which includes the best scientists. It has contributed to the partial prohibition of nuclear tests in 1963 and to the efforts to ban chemical weapons. The SALT-1 and SALT-2 talks were greatly promoted by the Pugwash movement.

The Committee of Soviet Scientists in Defence of Peace, Against Nuclear Threat was established in 1983. Its present leader is Academician Roald Sagdeyev, director of the Institute of Space Research, USSR Academy of Sciences. The Committee did research into

"nuclear winter" and helped sponsor the Soviet-US seismic experiment in Karkaralinsk.

The Committee published an interesting collection of materials on the Strategic Defence Initiative and the problem of space relations between the superpowers. It analysed the 1972 ABM Treaty with regard to what weapons it allowed. Lastly, the Committee worked out plans for the 95% cut in offensive nuclear weapons.

The Committee also helps sponsor traditional semi-annual talks on arms control and disarmament between the Soviet and the US Academies of Sciences.

KHRUSTOV: *The chance of a fluke outbreak of nuclear war through technical malfunction or computer error has been multiplying with each passing year. The Challenger tragedy and the Chernobyl accident showed once more what catastrophic consequences this may entail, didn't they?*

GOLDANSKY: The Chernobyl accident was a bitter lesson. We saw that we had come to the brink. But Chernobyl is also a major argument against over-confidence by scientists and specialists. Challenger and Chernobyl showed that mistakes and unpredictable situations can happen even at the forefront of technological progress.

Scientists all over the world proved that nuclear war would put into question the survival of humanity. General and complete prohibition of nuclear testing would mark the first major step towards a nuclear-weapon free world. The prohibition of tests would stop the production of mass destruction weapons.

By the way, the arms race not only puts humanity up against a tragic prospect of annihilation. It is already killing people. New weapon systems call for huge allocations, robbing the hungry of bread, the diseased of medicine and the homeless of shelter.

KHRUSTOV: *I visited Chernobyl soon after the accident and saw for myself its lesson that neither a nuclear nor a conventional war must be fought. For during a conventional war nuclear power plants would be hit, right?*

GOLDANSKY: Absolutely. Calculations show that complete destruction of a 1-million kW nuclear reactor (there are several hundred in the world) would be equal in radiation emission to the explosion of a megatonne nuclear bomb and to the explosion of a 10-megatonne nuclear bomb in long-term radiation consequences.

Taking into account the total capacity of the nuclear power plants in the world, such long-term consequences would equal the explosion of 4,000 megatonnes of nuclear charges. (Total world nuclear stockpiles are estimated to be 5,000—10,000 megatonnes).

In other words, the destruction of nuclear power plants in a conventional war would be tantamount to all-out nuclear war.

The idea of nuclear containment has long been obsolete. The new realities of this nuclear and space age are reflected in the Soviet disarmament programme. It is time we passed over from nuclear to verification containment, based not on force of arms but on strict mutual control over dwindling weapon stockpiles. When the sides can reliably control each other, they will learn to trust.

EUROPEANS were always afraid to be either involved in something against their will or left to their own devices. SDI is a unique opportunity to make them fear both options, said an American politician. These words are a perfect prevision of the future of some West European states that have been involved in the Strategic Defence Initiative.

In early 1985, Washington launched a mass propaganda campaign to assure Europeans of SDI benefits and break the opposition of France, Denmark, Norway and Greece. Britain and West Germany were cautious, too. Meanwhile, the Reagan Administration badly needed allied support to guarantee Congressional approval.

The propaganda show included the spreading of two opposite notions of SDI, one for internal and one for foreign use. For Americans, SDI was presented as an umbrella that would protect them against the "Soviet nuclear threat". For the West Europeans fearing that the USA would leave them to their own devices, an SDI commission offered a European SDI version — a system of defence against intermediate and shorter-range missiles. The plan was soon dubbed European Defence Initiative.

ITS ADVOCATES tried to present it as another programme designed to modernise traditional anti-aircraft defences. It was even called "extended anti-aircraft defence". The key element of that programme was to be the US-made anti-aircraft missile system *Patriot*.

The New York Times, citing a Pentagon spokesman,



VERSION FOR EUROPE

wrote that the *Patriot*, which had been developed over 20 years as an anti-aircraft system to defend forward-based US positions, was being modernised to be able to hit modern missiles. Way back in 1984, the USA and West Germany signed an agreement on the sale of 28 *Patriot* systems to West Germany. The system consists of eight launchers, each tipped with four missiles, commented the *Frankfurter Allgemeine*. In its turn, West Germany pledged to man and service 12 *Patriot* systems of the US Army in West Germany.

Under the agreement, West Germany was to buy, man

and service a total of 95 Franco-German *Roland* anti-aircraft missile systems. Twenty-seven systems were to be deployed at USAF bases in West Germany, and the rest to be supplied to the Bundeswehr's Air Force.

Soon after it was signed in Washington, the agreement was praised as a "milestone on the way to Atlantic military cooperation". It is indeed a milestone — in the acceleration of the arms race and militarist trends.

Photo: The Patriot anti-aircraft system (from the West German magazine Der Spiegel).

THE IDEA of an anti-missile belt for Europe is being sold by the West German military-industrial complex and its French counterpart. For example, François Eisburg, vice-president of the French corporation Thompson, believes that West European countries must replace the US-made *Hawk* missiles (now the core of their anti-aircraft defences) with European-made missiles. New systems must be able to hit not only aircraft, but also missiles. In short, another SDI version for Europe.

Indicatively, the advocates of these ideas try to avoid names like EuroSDI in order not to remind people of the US Star Wars. But whatever the name, the European anti-missile system is designed to complement the US SDI programme.

The Washington Times wrote that the creation in Europe of a defence system against intermediate-range nuclear missiles with the use of laser guns and interceptor missiles would be the first practical step in the framework of a larger strategic defence programme.

Even the Soviet-US treaty on the elimination of intermediate-and shorter-range nuclear missiles has not sobered EuroSDI advocates. One expert told the magazine *NATO Report* that there is a possibility that missiles against which we want to defend ourselves would not exist in six months. But the programme would continue being developed.

What for? Look how persistently the West has been pressing for "compensation" measures and for filling the "breaches" which the INF

Treaty would allegedly make. EuroSDI is designed to protect the nuclear forces in Western Europe and the forces to be deployed there as a "compensation". Both are offensive systems.

It turns out that EuroSDI, like its elder American brother, is designed not to promote security but to guarantee impunity and tip the balance in favour of NATO.

THE FIRST NATO member to sign an SDI agreement with the USA was Britain. In 1986, West Germany and Italy followed Britain's example. Their "secret memorandums" provide for industrial cooperation and new measures for control over secret information. But they do not guarantee the rights of foreign contractors. Hardly had the ink on the agreements with allies dried when the US Administration started violating them, the British-based weekly *New Statesman* reported.

In December 1986, President Reagan called for a "broad" interpretation of the ABM Treaty in order to guarantee the testing of SDI weapons. While General James Abrahamson, SDI programme director, assured allies of the US-European cooperation, his organisation has been standing aloof from the protection of European interests in the competition for SDI contracts.

European companies hoped to get at least 15% of the 26 billion dollars to be allocated for the SDI programme in 1985-1989. Since then, the sum dwindled to 18 billion, and the Federation of American Scientists has calculated that European contractors can count on no more than 1% of the sum.

Europeans have every reason to fear that the USA would use the SDI project in order to get hold of European technological secrets. On the other hand, the provision on the memorandums prohibiting the sales of high-tech equipment to the socialist countries is a serious barrier to the commercial use of Europe-assisted technologies.

THE Soviet-US INF Treaty has taken the wind out of the sails of EuroSDI. It is time Western Europe reviewed the expediency of its participation in the US plans of space militarisation, which are the main barrier to a nuclear-weapon free world. This is a common belief.

The Washington Defence Information Centre thinks that the realisation of SDI would not eliminate strategic nuclear weapons, as its advocates claim, but would encourage new, ever more dangerous rounds of the arms race. The centre scientists warn that the realisation of SDI would lead to the orbiting of dozens and even hundreds of nuclear systems around the Earth. This ABM system would be controlled by computers which have not been tested in action. This would not prevent a nuclear war; on the contrary, a nuclear war could start by accident.

The dangerous plans of space militarisation affect the vital interests of entire humanity. The Soviet Union, other socialist countries and all progressives of the world have been working to ban the Star Wars and preserve a peaceful outer space.

Lieutenant-Colonel
Vladimir NIKANOROV

The Soviet General Staff at War

We continue excerpts from the book* by the famous Soviet military leader General of the Army Sergei Shtemenko telling of the activities of the General Staff and the Supreme Command GHQ during the Great Patriotic War.

THE OFFICERS OF THE GENERAL STAFF AND THEIR WORK

It has become customary that, when we speak of people doing creative intellectual work, we mean artists, writers, less often technicians, and almost never the military. Yet the art of warfare calls in no smaller degree for inspiration and a keen intellect.

This primarily applies to top-echelon military personnel, who must have more than a sound knowledge of military matters and an ability to fathom the prospects of their development. They must be able to get their bearings amidst the intricate political, economic and technical problems, understand them correctly and forecast their likely influence on military theory and practice, on warfare as a whole, and on every single operation and battle.

These qualities are particularly indispensable for the Chief of the General Staff.

In describing the work of the General Staff during the war, I must describe in greater detail two prominent leaders — Aleksandr Vasilevsky and Aleksei Antonov. The former was Chief of the General Staff from the middle of 1942 to February 1945. The latter took over this high post towards the end of the war, but for a long time before this, during Vasilevsky's frequent and prolonged visits to the fronts, successfully carried out his duties.

Let us begin, then, with Aleksandr Vasilevsky. I worked with him nearly twelve years in various degrees of subordination and on various rungs of what can be described as the service hierarchy. This close and rather long period of joint service enabled me to make a very thorough study of Vasilevsky's personal qualities. And the better I got to know him, the more I came to respect this man of soldierly sincerity, unfailingly modest and cordial, a military leader in the finest sense of the word.

First, his profound knowledge of military matters. Vasilevsky had fought in the First World War. He had taken part in organising the first regular units of the Red Army and had fought in the Civil War. After the internal counter-revolutionaries were defeated and the interventionist armies chased off Soviet soil, he spent seven years as regiment commander. All this time he studied persistently and proved a thoughtful officer, with initiative and a broad outlook. His superiors also noted his modesty and self-composure.

In 1936, after a short period of service, Vasilevsky entered the General Staff Academy, where he enhanced his knowledge and skill in tackling the problem of operational art, honed his technique and acquired wider scope for creative work. He graduated from the academy as brigade commander and was appointed to the General Staff. Initially, he was assistant to the

*S. M. Shtemenko. "The Soviet General Staff at War". 2nd edition, supplemented. Moscow, Military Publishing House, 1975 (abridged). For beginning, see SMR Nos 1—7, 1988.

chief of the operations branch, and in the middle of 1939, when the Operations Department was established, became assistant and then deputy chief of the department for the West. In this post Vasilevsky's gift for operational matters showed itself more convincingly. Very soon he became a leading figure in the effort to elaborate the Soviet Command's most important plans.

Vasilevsky's most salient feature was the trust he placed in his subordinates, his profound respect for people and concern for their dignity

Two months after the Great Patriotic War had broken out, on August 25, 1941, Major-General Vasilevsky was posted as Chief of the Operations Department, simultaneously fulfilling the duties of Deputy Chief of the General Staff. Working at these posts, he was directly involved in the planning of the operations designed to rebuff the enemy's thrusts and smash their forces on the approaches to Moscow.

He surmounted all obstacles with enviable calmness and remarkable self-control. His profound knowledge of the nature of war and ability to foretell the progress and outcome of the most complicated operations very quickly brought him to the forefront of Soviet military leaders. Vasilevsky's most salient feature was the trust he placed in his subordinates, his profound respect for people and concern for their dignity. He realised how difficult it was to remain organised and efficient in the critical initial period of a war which had begun so unfavourably for us, and he tried to weld us together as a team, to create a working atmosphere in which one would not feel any pressure of authority but only the strong shoulder of a senior and more experienced colleague on which, if need be, one could lean. We repaid him in kind for this human warmth, his sensibility and sincerity. Among the General Staff personnel Vasilevsky commanded not only the highest esteem but also universal love and affection.

From the very first months of the war, Vasilevsky had to maintain close contacts with Stalin, who, as I have already noted, would not take vague answers or guesswork and often demanded personal verification of the situation on the spot. Not infrequently Vasilevsky's front-line missions involved risk to his life; nevertheless, they were invariably carried out strictly on time and with impeccable accuracy. His reports to the Supreme Command GHQ were always precise and thorough. The Supreme Commander-in-Chief fully appreciated Vasilevsky's merits in

this respect and began to send him out to the front more and more often, whenever some problem had to be deeply analysed and the best solution elaborated and formulated in terms of ready-made proposals.

Nature had endowed Vasilevsky with the rare talent of being able to grasp the gist of the matter literally in his stride, draw the right conclusions and foresee the further development of events with unusual clarity. He never showed off. On the contrary, he would always listen to the ideas and opinions of others with particular attention, never interrupting, even if he disagreed with the views being expressed. Instead, he would make his point patiently and persuasively, and in the end would generally win over his opponent. At the same time he knew how to defend his own viewpoint before the Supreme Commander-in-Chief.

The distinguishing traits of Vasilevsky's operational style were the boldness of his concepts, a desire to surround the enemy and cut off his withdrawal routes, or split him so that during the operation the threat of isolation to him would increase. These were the typical features of the Ostrogozhsk-Rossosh, Stalingrad, Byelorussian, Memel and many other operations, in planning and conducting which Vasilevsky was personally involved. The East Prussia operation also bears the characteristic imprint of resolution. In this operation Vasilevsky himself commanded the 3rd Byelorussian Front; in this post he replaced Ivan Chernyakhovsky killed in February 1945. Vasilevsky was always ready to answer to the country for his actions without any attempt at self-excuse, point of character which is the highest manifestation of a military leader's courage. He never boasted of his successes. An enemy of any misrepresentation of the facts, Vasilevsky would never draw attention to his person in the event of success, although his part was often decisive.

Vasilevsky perfectly realised how detrimentally his frequent absences affected the General Staff and sought a worthy deputy. Such a man was found. On December 11, 1942, we learned that on Vasilevsky's recommendation Lieutenant-General Aleksei Antonov, the former chief of staff of the Transcaucasian Front, had been appointed Chief of the Operations Department and Deputy Chief of the General Staff.

Hardly a month passed after Antonov was appointed to the General Staff than he was given the extremely important assignment as the representative of the Supreme Command GHQ to elucidate the situation on the Voronezh and Bryansk Fronts, and then the Central Front, for the purpose of making specific proposals about the further use of their forces. His mission lasted from January 10 to March 27, 1943. We all realised this was the final test for

the new chief of the Operations Department. The Supreme Command wanted to be quite sure that it had selected the right man for a key military post.

The forces of the Voronezh and Bryansk Fronts were in a kind of offensive crisis aggravated by the harsh winter. After a series of brilliant victories, they had lost momentum and their advance had slowed. Antonov worked under Vasilevsky's supervision, which made things easier for him. But Vasilevsky himself benefited from having such a reliable and competent assistant. Their joint efforts, with active cooperation of front commands, produced a very accurate estimate of future developments on the Orel-Kursk sector, which at that time was one of the most important.

Antonov's theoretical background, organizing ability, clarity of mind and great composure, along with an outstanding gift for operational art, seemed to qualify him for a long spell at the helm of the Operations Department. But in Vasilevsky's absences, which became increasingly frequent and prolonged, Antonov had to shoulder an unbearable burden of duties as Chief of the General Staff as well. Even he could not cope with two such extremely heavy burdens, and in war-time at that. The Supreme Command GHQ realised this and released him from direct supervision of the Operations Department. This, in effect, put him in charge of the General Staff, which he managed in close cooperation with Vasilevsky, keeping him constantly informed about everything that mattered and receiving instructions, advice and support in return.

Antonov's self-composure was combined with unusual firmness and, I should say, a certain abruptness, even sternness in official relations

A very hard worker, with remarkable knowledge of staff work, Antonov held all the controls of an army several million strong at his fingertips. Thanks to his great erudition and youthful energy, he coped admirably. When the representatives of the Supreme Command GHQ submitted their reports to the Supreme Commander-in-Chief, they always made sure to send a copy to "Comrade Antonov". They all knew that Antonov's response would be prompt and efficient.

Antonov's culture and military erudition showed up in the breadth and depth of his approach to all aspects of work in the Gene-



Marshal of the Soviet Union Aleksandr Vasilevsky, Chief of the General Staff, with the General of the Army Ivan Chernyakhovsky, Commander of the Third Byelorussian Front

ral Staff, in all he said and did and especially in his treatment of others. In the six years we served together, I never once saw him lose his temper. He was a remarkably well-balanced person, but not a bit soft. Antonov's self-composure was combined with unusual firmness and, I should say, a certain abruptness, even sternness in official relations. Some people considered him pedantic. But it was a good kind of pedantry. Very soon the more far-sighted among us began to appreciate Antonov for his adherence to principle and the consistency with which he made his demands, which is absolutely essential in the army, particularly with a war on. He would not tolerate superficiality, haste, slovenliness or any shrinking of duty.

Antonov enjoyed indisputable authority with the Supreme Commander-in-Chief, and I believe his brave straightforwardness and the veracity of his reports, which always presented the facts as they were, no matter how disappointing, played no small part in this.

Though outwardly they seemed to be very different men, Vasilevsky and Antonov actually had much in common. They were worthy representatives of the General Staff during the war. They largely contributed to victory and we, the men who worked with them, their closest assistants and pupils, will always be proud of them.

(To be continued)

Nina GRUDTSYNA, Cand. Sc. (Pedagogy)
Anna FETISOVA, Cand. Sc. (Philology)

TEXT

ПРАЗДНИК АВИАТОРОВ

В День Воздушного Флота СССР по традиции в Москве проводится авиационно-спортивный парад. Мастера авиационного спорта демонстрируют своё искусство пилотирования, умение управлять парашютом, выполнять сложные фигуры воздушной акробатики.

Праздник открывают обычно вертолёты, которые несут огромные флаги. На первом вертолёте — портрет Владимира Ильича Ленина. На следующих — Государственный флаг СССР, флаги всех пятнадцати союзных республик, Советской Армии, Военно-Морского Флота, Военно-Воздушных Сил и Добровольного Общества Содействия Армии, Авиации и Флоту (ДОСААФ) СССР.

Затем в небо поднимаются спортивные самолёты. От них отделяются парашютисты, которые выполняют групповые прыжки, различные фигуры и построения. Несколько часов лётчики, парашютисты, планеристы демонстрируют свои спортивные достижения. И вот в воздухе — спортивные дельтапланы. В стране сейчас более 600 дельтаклубов, где занимаются тысячи человек.

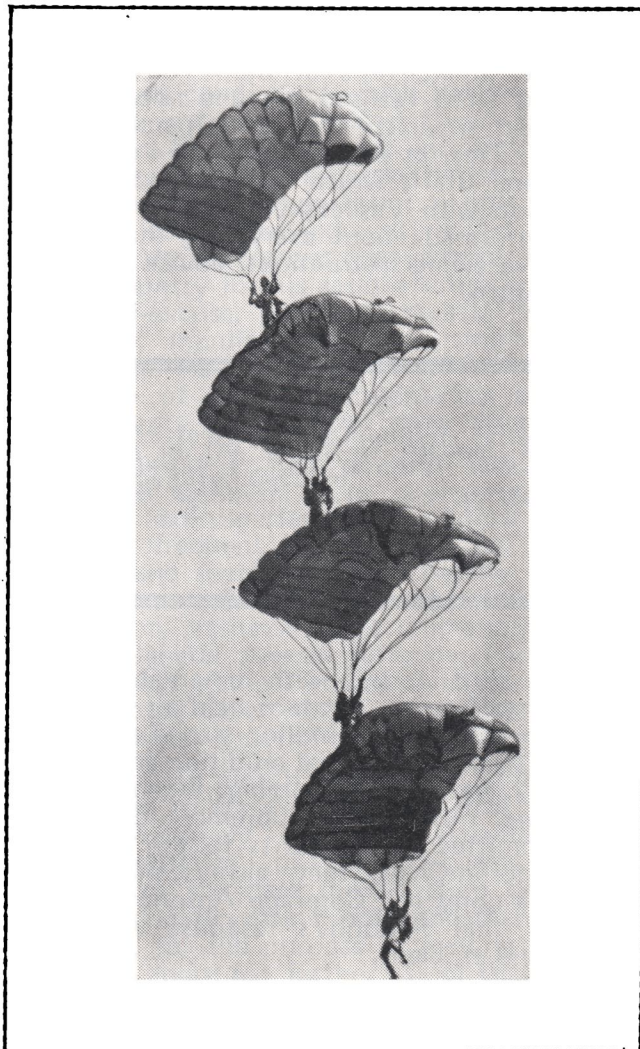
Завершается праздник красочным фейерверком.

Words and Word Combinations

1. праздник авиаторов 2. традиция 3. проводить, проводится 4. авиационно-спортивный парад 5. мастер авиационного спорта 6. демонстрировать искусство пилотирования 7. умение управлять парашютом 8. выполнять фигуры 9. воздушная акробатика 10. открывать 11. вертолёт 12. нести огромный флаг 13. портрет 14. следующий 15. государственный флаг 16. пятнадцать союзных республик 17. Добровольное Общество Содействия Армии, Авиации и Флоту (ДОСААФ) СССР 18. подниматься в небо 19.

спортивный самолёт 20. отделяться 21. выполнять групповые прыжки 22. различные фигуры и построения 23. планерист 24. спортивные достижения 25. воздух 26. дельтаплан 27. заниматься 28. тысячи человек 29. завершается фейерверком

1. Airmen's Day 2. tradition 3. here: to stage 4. air sports parade 5. master of air sports 6. to display great airmanship 7. parachute guidance skills 8. to perform flight manoeuvres 9. aerobatics 10. to open 11. helicopter 12. to carry an enormous flag 13. portrait 14. next 15. national flag 16. fifteen Union Republics 17. All-Union Voluntary Society for Assisting the Army, Air Force and Navy (DOSAAF) 18. to soar into the sky 19. sports plane 20. to separate 21. to perform group jumps 22. various manoeuvres and formations 23. glider pilot 24. sports achievements 25. air 26. hang glider 27. to go in for smth 28. thousands of people 29. terminates in fireworks



ASSIGNMENT

1. Find in the text and finish up these word combinations.

авиационно —

авиационный —

2. Read and memorise the names of air specialists and sportsmen.

вертолётчик
лётчик

парашютист
планерист
дельтапланерист

3. Find in the text appropriate nouns for the adjectives.

спортивный, спортивные

4. Supplement and answer these questions according to the text.

— Что ... в Москве по традиции 21 августа?

— Что ... мастера авиационного спорта?

— Что ... несколько часов лётчики, парашютисты, планеристы?

Keys:

1. Авиационно-спортивный парад; авиационный спорт.

3. Спортивный парад, спортивный самолёт; спортивные достижения, спортивные дельтапланы.

4. Проводится; демонстрируют; демонстрируют.

This Is Interesting to Know

ЛЁТЧИКИ — ГЕРОИ

Самыми знаменитыми военными лётчиками Советского Союза являются Иван Кожедуб и Александр Покрышкин. Каждый из них — трижды Герой Советского Союза.

Во время войны с фашистами Иван Кожедуб совершил 330 боевых вылетов, провёл 120 воздушных боёв и сбил 62 самолёта противника.

Александр Покрышкин совершил 600 боевых вылетов, провёл 156 воздушных боёв и сбил 59 самолётов противника.

HERO PILOTS

Ivan Kozhedub and Aleksandr Pokryshkin are the most renowned Soviet military pilots. Each was awarded the title of Hero of the Soviet Union three times.

During the war against the nazis Ivan Kozhedub made 330 sorties, took part in 120 dog fights and shot down 62 enemy planes.

Aleksandr Pokryshkin flew 600 air missions, participated in 156 dog fights and downed 59 enemy planes.



МИГ-23

Это сверхзвуковой реактивный истребитель. Особенностью самолёта является крыло, которое в полёте по воле лётчика может изменять свою геометрию. Крыло такой конструкции позволяет совершать полёты на большие расстояния, взлетать и садиться с площадок ограниченных размеров. МИГ-23 успешно эксплуатируется в Военно-Воздушных Силах армий братских, социалистических государств, являющихся членами Варшавского Договора.

MiG-23

This is a supersonic jet fighter. The distinguishing feature is the wing: its geometry can be changed by the pilot in flight. Such a variable-geometry wing allows the plane to perform long-range flights, and take off from and land on short strips. MiG-23 has been used to advantage in the Air Forces of the Warsaw Treaty Organisation.

Revision Exercise

Recall the meanings of these Russian words from Lessons 6 and 7.

Праздник, флот, море, корабль, противник, наступление, бой, оборона, оружие, победа.

Physical Fitness Day is marked on August 13. It is a truly national holiday, as over 90 million people regularly go in for physical training and sports. Mass sports activities are given special attention in the Soviet Armed Forces. Our correspondent discusses army athletes' achievements and problems with Colonel Artur STARODUBTSEV, Deputy Chief of the USSR Ministry of Defence Sports Committee.



1988 is a special year, the year of the 24th Summer Olympics. This must have affected the work of army sport organisations.

Training athletes for Olympic Games is a formidable task for all sports committees and clubs. Judging by the Winter Olympics in Calgary, our work has been fruitful. Nearly half the USSR national team were army athletes. Twenty-six out of the 52 won 32 medals (21 gold, 8 silver

and 3 bronze). This is a record for the Armed Forces. Take, for instance, army figure skaters Yekaterina Gordeyeva, Sergei Grinkov, Natalya Bestemyanova and Andrei Bukin, skiers Captain Mikhail Devyatyarov and Lieutenant Aleksei Prokuratorov, biathlete Senior Lieutenant Valery Medvedev, skater Lieutenant Nikolai Gulyayev, and the ice hockey players. We can be proud of them.

The brilliant victories in Calga-

ARMY SPORT:

ry are now history. Recent, but still history. The Seoul Games due to open on September 17 are ahead. I know that forecasts in big-time sport are dangerous. But still...

Incidentally, the Armed Forces' sporting potential and our athletes' leading role have recently grown both at home and abroad. Considerable strides ahead have been made in gymnastics, boxing, shooting and track-and-field. Last year army athletes won more than half the total number of individual gold medals the Soviet athletes brought back from European and world championships. The first half of the current year has also seen remarkable successes for our athletes. What can we count on in Seoul? Two hundred and thirty-one Armed Forces' representatives (a third of the Soviet national squad) will have a real chance to take part in the Olympics. They will include wrestlers, weight lifters, boxers, cyclists, gymnasts, swimmers, divers, shooters, archers, fencers and track-and-field athletes.

That gives the impression of no problems for big-time sport in the Armed Forces. Is it really so?

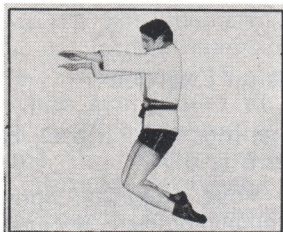
No, there are problems. The leadership of the games section has not been up to the mark of

EXTRAMURAL SAMBO COURSE

LESSON EIGHT

We continue to study wrestling techniques in the standing position.

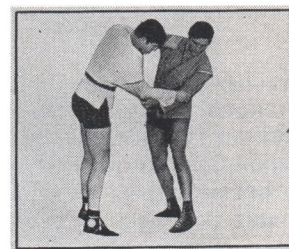
Preparatory stage. After a warm-up, do exercises to deve-



lop the requisite physical qualities and coordination of movements. Skip over a rope 2 to 2.5 m long, first on both feet, and then alternately on each foot, swinging the free leg and turning 45, 90 and 180 degrees from the half-squatting position.

Repeat the self-safety methods you have learned, and start practising a new method used in a knee-fall.

Stand on your knees. Unbending your shins sharply, assume the squatting position (10-15 times). Work up the very moment of falling from the squatting and half-squatting positions. See that



your leg muscles are tense, the body is slightly inclined forward and the chin is pressed to the chest. In rehearsing this exercise, try to keep on the toes as long as possible (Photo 1). When you are good at this technique, perform self-safety in the standing position.

Main stage. Let us now proceed to the throw known as reaping.

To get ready for it, you may get your opponent out of balance by shifting his body's centre of

SUCCESSES AND PROBLEMS

late. Hence, worse play by the basketballers from the Kiev Military District, field hockey team from the Turkestan Military District, rugby players from the Gagarin Air Force Academy and the water polo team from the Central Navy Sports Club. And, of course, the prestige of army sport has been undermined by the football team from the Central Army Sports Club, which has been relegated from the premier league. Another example. Five years ago two teams competed in the premier league and six teams in the first. Today there is not a single team left in the premier league and there are only three in the first. We are also below world standards in speed skating and downhill skiing.

The moral and psychological training of certain athletes is also inadequate. The training intensity and volume are constantly increasing, and stress situations during competitions becoming more frequent. This urgently calls for immediate introduction into the training process of the latest achievements of sporting science and medicine, mathematical analysis and computers.

The perestroika atmosphere in the country necessitates a new approach to promising trends in the

development of sport. I mean interdepartmental centres, experimental teams, pooling of efforts, improvement of the sporting base, self-financing and cost accounting. In other words, we must learn to operate economic levers in order to combine personal and state interests.

Discussing big-time sport, we must not forget about the importance of adequate physical conditioning for servicemen in maintaining constant combat readiness for the army and navy...

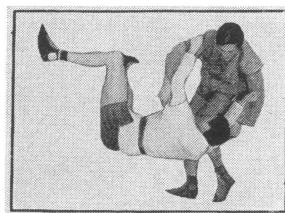
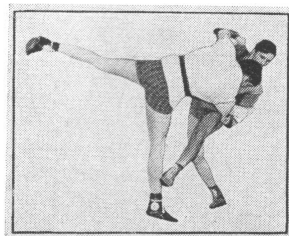
The most important thing is to sharply enhance the effectiveness of the existing physical training system so as to make it military-related, because there is a substantial gap between the contents of physical training and servicemen's real working conditions. Accordingly, the contents and methods used at lessons, their planning and supervision and material and technical support are being revised. An important role is assigned to the new Physical Training and Sports Manual. But the most important and, to my mind, the most difficult thing is restructuring the mentality of a considerable number of officers, who regard physical conditioning as a secondary matter. It is an open secret that officers in

some units, staffs and naval ships are no longer examples of smart appearance and physical perfection. Lower demands have been made on physical fitness. Generally speaking, physical training in the forces is given little time. Hence its low efficiency. Physical training lessons in training subunits, e. g. for signalmen and drivers, are totally non-existent. So there's much work to be done.

You have mentioned the new Manual. How can it help commanders — the practical organisers of the physical training process?

The new Manual specifies the general and special physical training tasks which are matched with its contents. The new Manual is expounded task-wise, and not section-wise as before. This has made it possible to concretise the specific missions facing different fighting arms and systematise the exercises from the view-point of developing the necessary physical quality or motor activity. The improved methods are likewise targeted at developing not only basic physical qualities but also military applied skills. The Manual also sets forth recommendations for organising physical training lessons in special conditions. Besides, it contains a first-ever description of the specifics of physical training for service women. I believe that the Manual is a good aid for subunit commanders. It is most important to apply its provisions to practical requirements in troops' combat training.

gravity forward, onto the toes. To this end, grip your partner's sleeve above the elbows and pull it to yourself and upwards (Photo. 2, the opponent on the left). When your partner is on the toes of the attacked leg, sharply place the inner side of your foot (the left in our case) under the shin of the opponent's attacked leg (Photo 3). Perform the throw, continuing the movement with your arms (Photo 4).

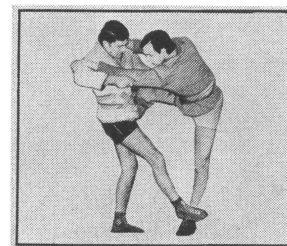


Final stage. Do a few exercises to develop strength (pulling yourself up on the horizontal bar, bending and unbending the arms in the upperarm rest). End the lesson with exercises to restore breathing.

Lesson given by Captain of Internal Service Aleksei KUSTOV, Photos by Mikhail PETUKHOV

The reaping may well be done by gripping the opponent's leg. Grip with your left hand the partner's right leg under the outside of the knee. Use your other hand to pull the opponent by the sleeve. Simultaneously, dislodge the partner's support leg with the inside of your foot, twist him to yourself and downwards (Photo 5) and perform the throw.

Repeat the throws 20-25 times rightwards and leftwards remembering to safeguard your partner.





Invulnerable Fortress



ANATOLY KARPOV'S
CHESS CORNER

Fairly frequently at the board you meet situations where one side, though having a major material advantage, is unable to get at the enemy King who settles into an artfully built fortress.

Look at Diagram 1. Black has a considerable edge in material. The trouble is that the Queen cannot checkmate by itself, and the Black King is unable to get further than the 4th rank. Sacrificing the Queen for Rook and pawn will not help either, since the Black a-pawn will not make the promotion square.

There are examples of invulnerable strongpoints being constructed with lesser forces. In Diagram 2 we have a Vitaly Chekhover composition. How is White saved?

No help comes from 1.Bh2 due to 1...a4 2. Kd2 a3 3.Kc2 Kg5 4.f4+ (weaker is 4.f3 because of 4...g1Q 5.Bxg1 Kf4 and Black wins) 4...exf4 5.e5 a2 6.Kb2 f3 7.exd6 f2, and Black must win.

But there is another,

paradoxical path: 1.f3! a4 2.Kf2! a3 3.Kg3 a2 4.Kxh3 a1Q 5.Kxg2. The job is done, the fortress built, and Black cannot take it. For example, 5...Qb2+ 6.Bf2 Kg5 7.Kg3 Qc1 8.Ba7! Qf4+ 9.Kg2 Qd2+ 10.Kg3... The Black King can penetrate the enemy camp neither through f4, nor through a7.

See Diagram 3 for another fine etude by Chekhover. We will begin together and the ending will provide homework until next time.

1.Rb1! — the only salvation against the emergent Queen, though the price is high. 1...cxb1Q 2.Bxb1 e3 3.Bxf5 e2...

Analyse the position. Can you find the way to complete the defence?

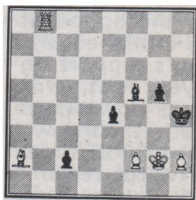
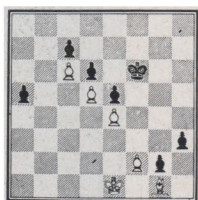
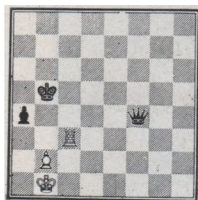
A position from a game between German Pilnik and Samuel Reshevsky was offered for independent study last month. It finished as follows:

1.Qf2!, and, threatened with loss of his own Queen, Black must take the enemy Queen and accept stalemate.

Diagram No. 1
Draw, no matter
who moves first

Diagram No. 2
Vitaly Chekhover
White begins
and forces a
draw

Diagram No. 3
Vitaly Chekhover
White begins
and forces a
draw



★ SOVIET MILITARY REVIEW

IN THIS ISSUE:

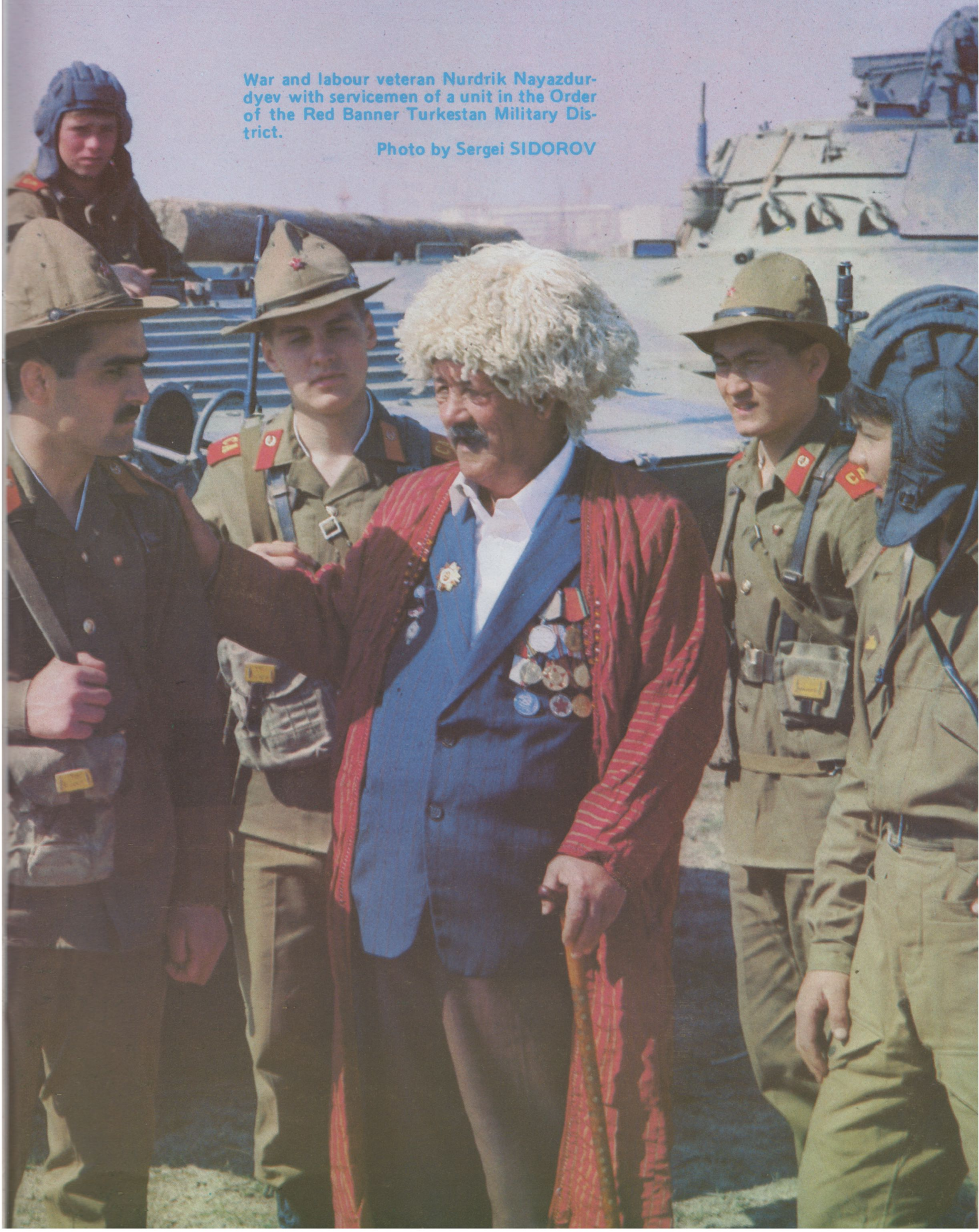
A New Stage for the World Politics Homecoming by	2
B. MAKAREVICH	4
Laws of War by A. INYAKOV	8
Gas Scout Practice by S. UGOLKOV	12
Master Class by A. ANDREYEV	14
A Passion for Flying by V. ZDANYUK	17
Naval Target Practice by O. ODNOKOLENKO	20
The Last Flight of Yuri Gagarin by S. BELOTSEKOVSKY	22
Battalion Technical Train by A. CHERVYAKOV	26
In Transit for Peace by A. PANCHENKO	28
Drill Ground Roses by V. PONOMARYOVA	30
Living Memories by N. AIVAZYAN	36
Who Let the Jinni Out? by S. MONIN	42
Marshal Tukhachevsky by N. KUROY	45
"I Am a Soldier at Heart" by Yu. NIKULIN	48
The Betrayal by A. ORLOV	50
Academician Goldansky: "I Believe in Reason"	53
SDI Version for Europe by V. NIKANOROV	55
The Soviet General Staff at War by S. SHTEMENKO	57
Russian Language Page	60
Army Sport: Successes and Problems by A. STARODUBTSEV	62

Chief proof-reader Lyudmila NEVEROVA took part in preparing this SMR issue



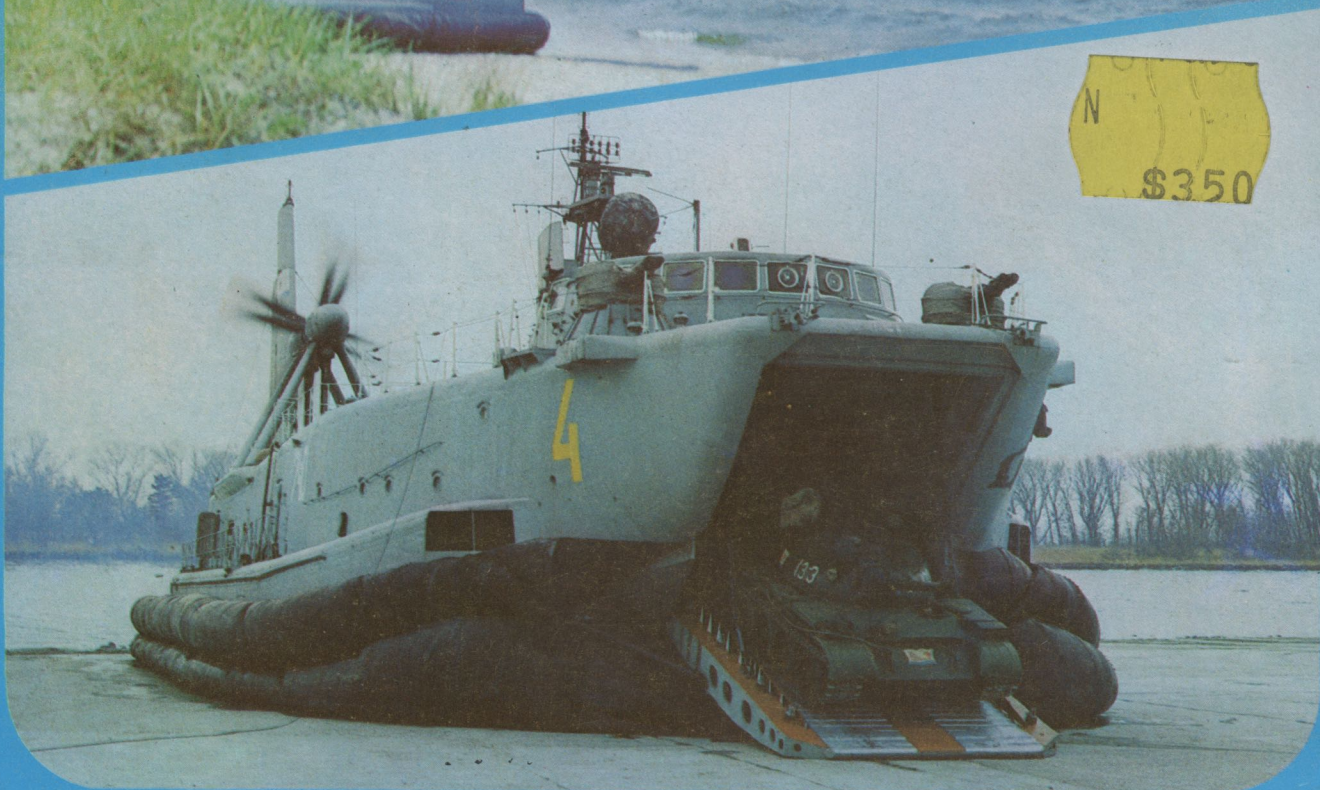
War and labour veteran Nurdrik Nayazdurdyev with servicemen of a unit in the Order of the Red Banner Turkestan Military District.

Photo by Sergei SIDOROV



70893

These ships use a dynamic principle, which enables them to be kept above water due to excessive pressure built up by a special unit. This makes them capable of negotiating flat areas of land, moving over ice and marshes and being used as landing craft.



Air-Cushion Ships